ORDNANCE SURVEY GB

OS OPEN NAMES™ – TECHNICAL SPECIFICATION

Version history

Version	Date	Description
2.0	07/2019	New format release.
2.1	10/2019	Amendments to 'Purpose of this document' section.
2.2	01/2023	GeoPackage format attribute name changes. Formatting improvements to the document.

Purpose of this document

This document provides information about and insight into the OS Open Names product and its potential applications. For information on the contents and structure of OS Open Names, please refer to the Overview and Getting Started Guide.

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Contact details

OS website 'Contact us' page (https://www.ordnancesurvey.co.uk/contact-us).

Contents

1. Introduction

OS Open Names is a geographic directory that contains basic information about identifiable places (i.e. named places). The content of the product is divided into themes based on type and local type classification values. The data contains accurate and current settlement names, road names and numbers, postcodes and their locations, with additional contextual information and links to other datasets. It is designed for use across all market sectors and can be used for web service and mobile development.

The primary use of the product is to provide the location for a named place to support a wealth of activities such as discovery, identification, visualisation, geocoding, routing and navigation, and linking diverse information.

1.1   Product update schedule

OS Open Names is updated quarterly and released in April, July, October and January.

1.2   Available formats

OS Open Names is available in the following formats:

• Comma-separated values (CSV)

• Geography Markup Language (GML) 3.1.2

• GeoPackage

1.3   Source of OS Open Names

OS Open Names is updated from Ordnance Survey's data content stores.

Settlements

Settlements are sourced from an internal OS data store. For LocalType City and Town, the geometry supplied is the notional centre of the settlement (the position that the majority of informed people would accept as being the 'centre' of the settlement) and the position has been manually captured.

For all other settlement types, the position has been generated from the major road junction within the settlement, using OS MasterMap Highways Network.

Postcodes

A single point is taken from Ordnance Survey's database for the geometry of a postcode which is the notional centre created from all the addresses within the postcode unit.

Roads

The geometry for a road feature is derived from OS MasterMap Highways Network. The point has been calculated by finding the vertex closest to the centre of the bounding box, as shown in Figure 1.

A road feature will always have a point based on the entire road as per the examples shown in Figure 1. Furthermore, where a Road Name intersects a settlement or a Road Number intersects a City or Town, an additional point is created within the settlement.

Figure 1: Calculating points for roads in OS Open Names.

Numbered Road

For each section of road that intersects a City or Town, an additional point is calculated as per the method above. Figure 2 shows an example of a Numbered Road that intersects two towns, the blue box is the bounding box for the entire road and the blue cross is the vertex closest to the centre of the bounding box. For each Town or City the Numbered Road intersects, a bounding box is created for the section within the Town or City, shown in red. The closest vertex to the centre of the bounding box is then selected as the point, shown by the red cross. The red features will reference the Topographic Identifier (TOID) of the blue feature through the relatedSpatialObject attribute.
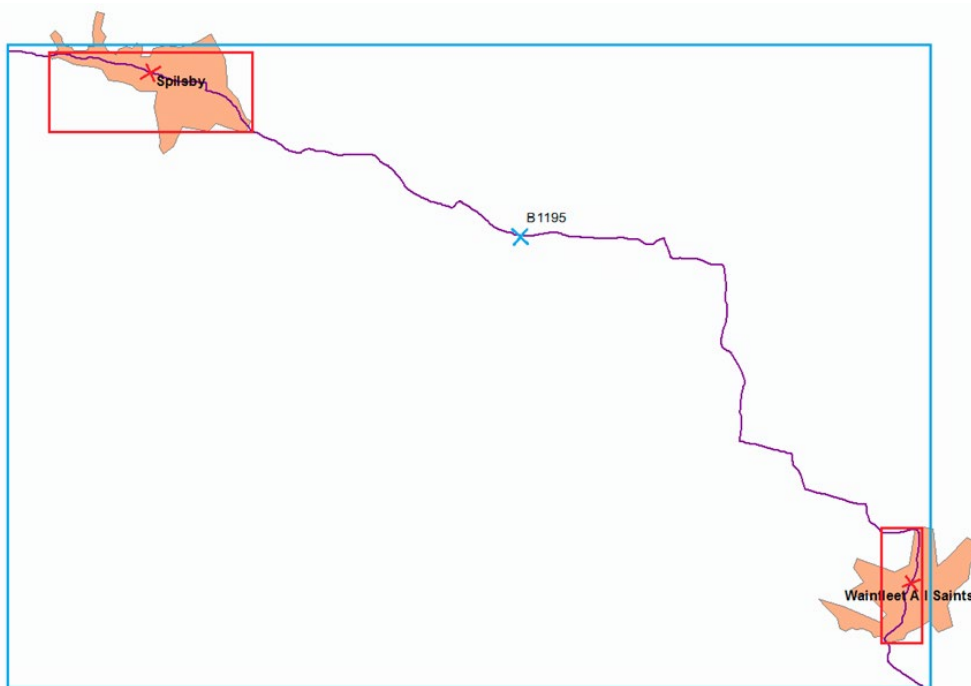
Figure 2: Calculating points for numbered roads that pass through settlements.

Named Road

For each section of road that intersects a settlement, an additional point is calculated as per the method above. Figure 3 shows an example of a Named Road that intersects two settlements; the blue box is the bounding box for the entire road and the blue cross is the vertex closest to the centre of the bounding box. For each settlement the Named Road intersects, a bounding box is created for the section within the settlement, shown in red. The closest vertex to the centre of the bounding box is then selected as the point, shown by the red cross. The red features will reference the TOID of the blue feature through the relatedSpatialObject attribute.
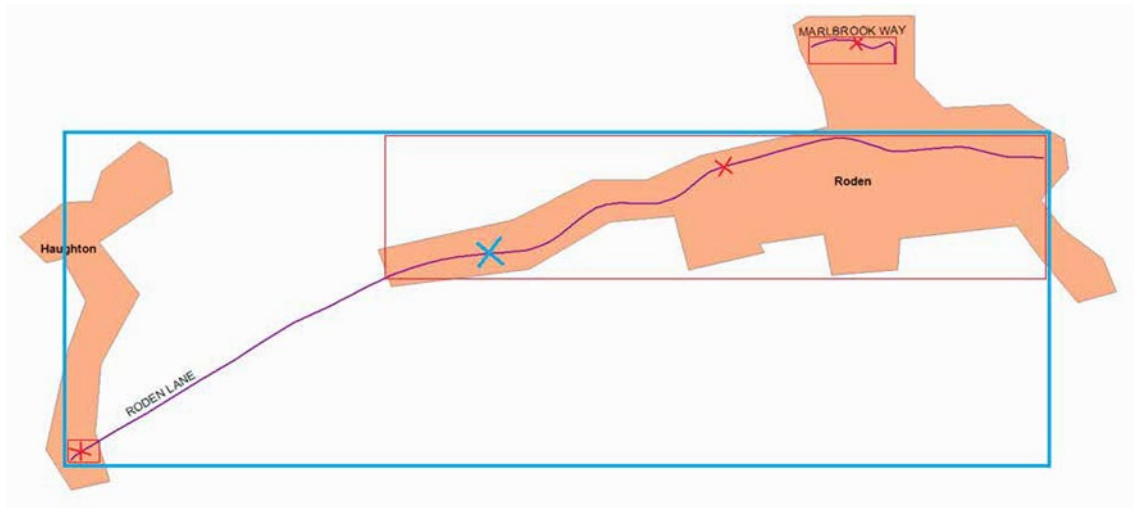
Figure 3: Calculating points for named roads that pass through settlements.

The points are queried against Boundary-Line to populate the contextual geography attributes such as DISTRICT_BOROUGH or COUNTY_UNITARY. The inPostcodeDistrict attribute is populated for roads only and uses the postcode district.

1.4   Coordinate reference system

The dataset uses the British National Grid spatial reference system. The National Grid coordinates are to a resolution of 0.1metre. This is the resolution of the source data. Positions are described as Easting and Northing coordinates in units of metres.

1.5 Viewing resolution

The most and least detailed viewing resolutions suggest a suitable scale at which to view each local type. Where the most detailed viewing resolution is set as 'variable', the resolution is based on a calculated value per feature:

max (bounding box width metres, bounding box height metres) x 6.5, round to nearest 1 000, minimum 1 000

Table 1:   The maximum and minimum recommended viewing resolution or scale at which names in the product should no longer be displayed in a viewing service such as a GIS

Type	Most detailed viewing resolution (Minimum value 1 000)	Least detailed viewing resolution
Airfield	variable	50 000
Airport	variable	50 000
Bay	variable	150 000
Beach	variable	100 000
Bus Station	variable	50 000
Bus Station, Coach Station	variable	50 000
Channel	variable	100 000
Chemical Works	variable	50 000
Cirque Or Hollow	variable	30 000
City	variable	9 000 000
Cliff Or Slope (Named Coastal Cliff Or Slope)	variable	40 000
Cliff Or Slope (Named Cliff)	variable	15 000
Coach Station	variable	50 000
Coastal Headland	variable	750 000
Electricity Distribution	variable	50 000
Electricity Production	variable	50 000
Estuary	variable	250 000
Further Education	variable	50 000
Further Education, Higher or University Education	variable	50 000
Further Education, Non State Primary Education, Non State Secondary Education	variable	50 000
Further Education, Non State Secondary Education	variable	50 000

Type	Most detailed viewing resolution (Minimum value 1 000)	Least detailed viewing resolution
Further Education, Primary Education	variable	50 000
Further Education, Primary Education, Secondary Education, Special Needs Education	variable	50 000
Further Education, Secondary Education	variable	50 000
Further Education, Special Needs Education	variable	50 000
Gas Distribution or Storage	variable	50 000
Group Of Islands	variable	3 000 000
Hamlet	5 000	25 000
Harbour	variable	20 000
Helicopter Station	variable	50 000
Heliport	variable	50 000
Higher or University Education	variable	50 000
Hill Or Mountain	variable	300 000
Hill Or Mountain Ranges	variable	3 000 000
Hospice	variable	50 000
Hospital	variable	50 000
Hospital, Medical Care Accommodation	variable	50 000
Inland Water (Named Water Expanse)	variable	500 000
Inland Water (Named Stretch Of Water)	variable	35 000
Inland Water (Named Water Expanse Group)	variable	40 000
Island	variable	800 000
Medical Care Accommodation	variable	50 000
Named Road	variable	20 000
Non State Primary Education	variable	50 000
Non State Primary Education, Non State Secondary Education	variable	50 000
Non State Secondary Education	variable	50 000
Numbered Road (A Road Extent)	variable	1 000 000
Numbered Road (B Road Extent)	variable	250 000

Type	Most detailed viewing resolution (Minimum value 1 000)	Least detailed viewing resolution
Numbered Road (Motorway Extent)	variable	1 000 000
Oil Distribution or Storage	variable	50 000
Oil Refining	variable	50 000
Oil Terminal	variable	50 000
Other Coastal Landform (Named Area Of Coastal Rock)	variable	50 000
Other Coastal Landform (Named Coastal Landform)	variable	20 000
Other Coastal Landform (Named Coastal Ravine)	variable	15 000
Other Landcover (Named Area Of Drained Land)	variable	1 300 000
Other Landcover (Named Area Of Rough Land)	variable	1 300 000
Other Landcover (Named Area Of Rural Land)	variable	800 000
Other Landform	variable	15 000
Other Settlement (Urban Area)	variable	60 000
Other Settlement (Urban District)	variable	60 000
Other Settlement (Crofting Locality)	15 000	25 000
Other Settlement (Rural Locality)	15 000	25 000
Other Settlement (Named Group Of Buildings)	15 000	25 000
Other Settlement (Named Locality)	15 000	25 000
Passenger Ferry Terminal	variable	50 000
Passenger Ferry Terminal, Vehicular Ferry Terminal	variable	50 000
Port Consisting of Docks and Nautical Berthing	variable	50 000
Postcode	3 500	18 000
Primary Education	variable	50 000
Primary Education, Secondary Education	variable	50 000
Primary Education, Special Needs Education	variable	50 000

Type	Most detailed viewing resolution (Minimum value 1 000)	Least detailed viewing resolution
Railway	variable	300 000
Railway Station	variable	50 000
Road User Services	variable	50 000
Sea	variable	12 000 000
Secondary Education	variable	50 000
Section Of Named Road	variable	25 000
Section Of Numbered Road (A Road Extent)	variable	25 000
Section Of Numbered Road (B Road Extent)	variable	25 000
Section Of Numbered Road (Motorway Extent)	variable	25 000
Special Needs Education	variable	50 000
Spot Height	variable	100 000
Suburban Area	variable	25 000
Tidal Water (Named Tidal Inlet)	variable	150 000
Tidal Water (Named Stretch Of Tidal Water)	variable	100 000
Town	variable	2 000 000
Tramway	variable	125 000
Urban Greenspace	variable	100 000
Valley	variable	800 000
Vehicular Ferry Terminal	variable	50 000
Vehicular Rail Terminal	variable	50 000
Village	variable	250 000
Waterfall	variable	15 000
Wetland (Named Inland Water Wetland)	variable	200 000
Wetland (Named Foreshore Or Tidal Water Wetland)	variable	15 000
Woodland Or Forest	variable	400 000

2. Product structure

2.1 Logical model diagram of OS Open Names data

The logical model diagram of OS Open Names in GML format can be seen in Figure 4:

Figure 4: Logical model diagram for OS Open Names.

2.2 Named Place Feature Type

This sub-section describes the single feature type (Named Place) available in the OS Open Names product, giving the following information about each attribute:

Name and definition: The name of the attribute and what it is describing.

Attribute type: The nature of the attribute, for example, a numeric value or a code list value.

Size: The length of the field.

Multiplicity: Describes how many times this element is expected to be populated in the data. An attribute may be optional or mandatory within the product, and the values may be used in combination.

- '1' = Mandatory: There must be a value.
- '0..1' = Optional: If populated, a maximum of one attribute will be returned.

<<FeatureType>> NamedPlace		
GML/CSV: Not in GML/CSV		**GeoPackage: Fid**
Definition: Feature identifier added by the software.		
Value type: Text	Size: 39	Multiplicity: 1
GML: <names:namedPlace gml:id>		**CSV/GeoPackage: Id**
Definition: A unique identifier that enables records to be identified easily. The identifier will be persistent for all LocalTypes, except Section of Named Road and Section of Numbered Road. • Settlements will have a TOID range allocated. • Postcodes will use the postcode without spaces as the identifier. • Roads will reuse identifiers from OS MasterMap Highways Network. • For Section of Named Road and Section of Numbered Road, a Fid is supplied as the Id. For example, ID_4e27cf36-1157-4748-a7ab-4c63283ba101. This Fid will not persist through product releases.		
Value type: Text	Size: 39	Multiplicity: 1
GML: <gml:identifier>		**CSV/GeoPackage: names_uri**
Definition: INSPIRE identifier for the Named Place which is maintained along with the version number and version date to reflect the life cycle of the feature.		
Value type: Text	Size: 75	Multiplicity: 1
GML: <gn:inspireId>		**CSV/GeoPackage: Not in CSV/GeoPackage**
Definition: INSPIRE identifier for the Named Place which is maintained along with the version number.		
Value type: Text	Size: 60	Multiplicity: 1
GML: <gn:beginLifespanVersion>		**CSV/GeoPackage: Not in CSV/GeoPackage**
Definition: For consistency with other Ordnance Survey products, this is the date of publication. This date will change with every refresh of the product.		
Value type: DateTime	Size: 30	Multiplicity: 1
GML: <gn:endLifespanVersion>		**CSV/GeoPackage: Not in CSV/GeoPackage**
Definition: The product only contains live names and as such this attribute will not be populated.		
Value type: DateTime	Size: 30	Multiplicity: 0..1 <<voidable>>
GML: <gn:spelling>		**CSV/GeoPackage: name1, name2**
Definition: The proper noun that applies to the real world entity. Names that are prefixed by the definite article are not formatted for alphabetical sorting, that is, 'The Pennines' not 'Pennines, The'. This is likely to be the attribute most used when searching the product.		
Value type: Text	Size: 250	Multiplicity: 1..2
GML: <gn:language>		**CSV/GeoPackage: name1_lang, name2_lang**
Definition: The language type is only set where more than one name exists. See Language code list.		
Value type: Text	Size: 3	Multiplicity: 1..2 (CSV Multiplicity: 0..2)

<<FeatureType>> NamedPlace	
GML: <gn:sourceOfName>	CSV/GeoPackage: Not for CSV/GeoPackage
Definition: Original data source from which the geographical name is taken from and integrated in the data set providing / publishing it. For some named spatial objects, it might refer again to the publishing data set if no other information is available. Set to <gn:sourceOfName nilReason="unknown" xsi:nil="true"/>.	

Value type: Text	Size: 20	Multiplicity: 1

GML: <gn:nativeness>	CSV/GeoPackage: Not for CSV/GeoPackage
Definition: Always the endonym. The name for a geographical feature in an official or well-established language occurring in that area where the feature is situated.	

Value type: Text	Size: 20	Multiplicity: 1

GML: <gn:nameStatus>	CSV/GeoPackage: Not for CSV/GeoPackage
Definition: The status of a geographical name that is the information enabling to discern which credit should be given to the name with respect to its standardisation and / or its topicality.	

Value type: Text	Size: 20	Multiplicity: 1

GML: <gn:type>	CSV/GeoPackage: type
Definition: The INSPIRE type of named place being represented by the specific feature.	

Value type: Text	Size: 30	Multiplicity: 1

GML: <gn:localType>	CSV/GeoPackage: local_type
Definition: The Ordnance Survey classification for the named place being represented by the specific feature. The LocalType will enable you to make your searches more efficient.	

Value type: Text	Size: 250	Multiplicity: 1

GML: <gn:geometry>	CSV: GEOMETRY_X , GEOMETRY_Y; GeoPackage: geometry
Definition: Point geometry in British National Grid. Resolution up to 1m.	

Value type: GML – GM_Point CSV – Real	Size: GML – No decimal places	Multiplicity: 1

GML: <gn:mostDetailedViewingResolution>	CSV/GeoPackage: most_detail_view_res
Definition: The maximum recommended viewing resolution or scale at which the names should no longer be displayed in a viewing service such as a GIS.	

Value type: Integer	Size: 9	Multiplicity: 1

GML: <gn:leastDetailedViewingResolution>	CSV/GeoPackage: least_detail_view_res
Definition: The minimum recommended viewing resolution or scale at which the names should no longer be displayed in a viewing service such as a GIS.	

Value type: Integer	Size: 9	Multiplicity: 1

<<FeatureType>> NamedPlace	
GML: <gml:boundedBy>	CSV/GeoPackage: mbr_xmin, mbr_ymin, mbr_xmax, mbr_ymax

Definition: Bounding box or Minimum Bounding Rectangle (MBR) for roads and settlements. For Settlements and Sections of Named and Numbered Roads, the MBR gives a representation of the extent of these features and is not snapped to the real world extent. Postcodes do not have an MBR; the Most and Least Detailed View Resolutions can be used as a substitute in this instance.

Value type: GML – GM_Envelope CSV – Real	Size: GML – 3 decimal places CSV – (precision, scale) x 9,3; y 10,3	Multiplicity: 0..1

GML: <names: inPostcodeDistrict xlink:title>	CSV/GeoPackage: postcode_district

Definition: The postcode district (for example, SO15) is supplied for all features, except where LocalType is Postcode. This helps to distinguish between features that have the same name, which makes it particularly useful when creating a search function.

Value type: Text	Size: 4	Multiplicity: 0..1

GML: <names: inPostcodeDistrict xlink:href>	CSV/GeoPackage: postcode_district_uri

Definition: The Linked Data identifier for Code-Point Open. Linked Data is a useful way of looking at or utilising data associated with the feature.

Value type: Text	Size: 60	Multiplicity: 0..1

GML: <names:inPopulatedPlace xlink:title>	CSV/GeoPackage: populated_place

Definition: The name of the settlement that the point geometry given for the road or postcode is within, to distinguish between roads with the same name, to improve searches, and to improve identification of postcodes. Where the settlement has more than one name, the name is concatenated with a space, a forward slash and a space. This can be used to assist with identifying a specific road within the data.

For example, High Street, Southampton or High Street, Portsmouth or to extract all roads within a settlement.

Value type: Text	Size: 103	Multiplicity: 0..1

GML: <names:inPopulatedPlace xlink:href>	CSV/GeoPackage: populated_place_uri

Definition: This is the Linked Data identifier for the settlement. Linked Data is a useful way of looking at or utilising data associated with the feature.

Value type: Text	Size: 60	Multiplicity: 0..1

GML: <names:inPopulatedPlace xlink:role>	CSV/GeoPackage: populated_place_type

Definition: URI to the code list which classifies the types of settlement that the feature is within.

Value type: Text	Size: 80	Multiplicity: 0..1

<<FeatureType>> NamedPlace	
GML: <names:inDistrictOrBorough xlink:title>	CSV/GeoPackage: district_borough

Definition: The name of the District, Metropolitan District or London Borough administrative unit that the point geometry for the feature is within.

Note: These areas do not cover the whole of GB so some values will be blank. This gives additional context to the location of the feature and enables all features with the same value to be easily identified.

Value type: Text	Size: 80	Multiplicity: 0..1
GML: <names:inDistrictOrBorough xlink:href>		CSV/GeoPackage: district_borough_uri

Definition: The Linked Data reference to the District.

Value type: Text	Size: 80	Multiplicity: 0..1
GML: <names:inDistrictOrBorough xlink:role>		CSV/GeoPackage: district_borough_type

Definition: The URI to the code list which classifies the type of administrative unit.

Value type: Text	Size: 80	Multiplicity: 0..1
GML: <names:in CountyOrUnitaryAuthority xlink:title>		CSV/GeoPackage: county_unitary

Definition: The name of the County (non-metropolitan or Metropolitan), Unitary Authority or Greater London Authority administrative area that the point geometry for feature is within or nearest to. This assists with the identification of specific features within searches and enables all features with the same value to be easily identified.

There are some rules applied:
- If within COUNTY_UNITARY, select COUNTY_UNITARY.
- If not within COUNTY_UNITARY but is within DISTRICT_BOROUGH, then do not populate.
- If not within COUNTY_UNITARY and not within DISTRICT_BOROUGH, then select the nearest COUNTY_UNITARY.

Value type: Text	Size: 80	Multiplicity: 0..1
GML: <names:in CountyOrUnitaryAuthority xlink:href>		CSV/GeoPackage: county_unitary_uri

Definition: The Linked Data reference to the County, Unitary Authority or Greater London Authority.

Value type: Text	Size: 80	Multiplicity: 0..1
GML: <names:in CountyOrUnitaryAuthority xlink:role>		CSV/GeoPackage: county_unitary_type

Definition: The URI to the code list which classifies the type of administrative unit.

Value type: Text	Size: 80	Multiplicity: 0..1

<<FeatureType>> NamedPlace	
GML: <names:inEuropeanRegion xlink:title>	CSV/GeoPackage: region
Definition: The name of the European Region (was Government Office Region) that the point geometry for the feature is within or nearest to. This gives additional context to the location of the feature and enables all features with the same value to be easily identified.	

Value type: Text	Size: 30	Multiplicity: 1

GML: <names:inEuropeanRegion xlink:href>	CSV/GeoPackage: region_uri
Definition: The Linked Data reference to the European region.	

Value type: Text	Size: 60	Multiplicity: 1

GML: <names:inCountry xlink:title>	CSV/GeoPackage: country
Definition: The name of the country that the point geometry for the feature is within or nearest to. This gives additional context to the location of the feature and enables all features with the same value to be easily identified.	

Value type: Text	Size: 30	Multiplicity: 1

GML: <names:inCountry xlink:href>	CSV/GeoPackage: country_uri
Definition: The Linked Data reference to the country.	

Value type: Text	Size: 60	Multiplicity: 1

GML: <gn:relatedSpatialObject>	CSV/GeoPackage: related_spatial_object
Definition: When a feature (for example, a section of Named Road) is a section of another feature (for example, a Settlement), this attribute references the inspireId attribute of the whole feature. Examples are given in Section 1.3.	

Value type: Text	Size: 20	Multiplicity: 0..1

GML: <names:sameAsDBPedia xlink:href>	CSV/GeoPackage: same_as_dbpedia
Definition: References DBpedia for settlements. The reference to DBpedia, for example, Bournemouth = http://DBpedia.org/resource/Bournemouth.	

Value type: Text	Size: 100	Multiplicity: 0..1

GML: <names:sameAsGeoNames xlink:href>	CSV/GeoPackage: same_as_geonames
Definition: References GeoNames for settlements. The reference to GeoNames, for example, Bournemouth = http://sws.GeoNames.org/2655095.	

Value type: Text	Size: 100	Multiplicity: 0..1

2.3　　Code lists

Figure 5: Logical model diagram for OS Open Names showing the three code lists in the product.

Code list: LanguageValue	
Describes the permitted languages	
Value	**Definition**
cym	The name is in the Welsh language.
eng	The name is in the English language.
gla	The name is in the Scottish Gaelic language.
NULL	The language type is not set if there is only one name. This appears as <gn:language nilReason="inapplicable" xsi:nil="true"/> (that is, the concept of language is not applicable to 'Accepted' names). NULL is also used if there are two names, and the language of one or both of the names is not recorded as English, Welsh or Gaelic. This appears as <gn:sourceOfName nilReason="unknown" xsi:nil="true"/>.

Code list: NamedPlaceTypeValue	
Describes the possible values for Named Place	
Value	**Definition**
administrative unit	Units of administration, dividing areas where Member States have and / or exercise jurisdictional rights, for local, regional and national governance, separated by administrative boundaries.
building	Geographical location of buildings.
hydrography	A name related to a water feature.
landcover	A name related to land cover, such as a Beach or Urban Greenspace.
landform	A name related to a land form, such as a hill, mountain or headland.
populatedPlace	A name for a place inhabited by people.
protected site	Area designated or managed within a framework of international, Community and Member States' legislation to achieve specific conservation objectives.
transportNetwork	A name for a feature related to road, rail, air or water transport. The data only includes named and numbered roads.
other	A spatial object not included in the other types of the code list. Data includes postcodes.

Code list: LocalTypeValue	
Value	**Definition**
Airfield	A named area of ground where aircraft take off and land. It may have some permanent buildings, but it is smaller than an airport and may be for private use only.
Airport	A named site where aircraft land and take off and which provide facilities for handling passengers, air freight and servicing aircraft.
Bay	A named area of open water, which is largely surrounded by (and often sheltered by) land.
Beach	A named area of sand and / or shingle either adjacent to, or straddling, mean high water or the shore of an inland water feature such as a river or lake.
Bus Station	A named place where buses begin, break or end their journey and at which passengers may embark or disembark.
Bus Station, Coach Station	A named place where buses and coaches begin, break or end their journey and at which passengers may embark or disembark.
Channel	A named relatively narrow stretch of water, connecting two or more open bodies of water.
Chemical Works	A named site where the principles of chemistry are applied to materials to create different materials on a large scale.
Cirque Or Hollow	A named natural depression in the landscape.
City	A named centre of business and population, vested with City status by virtue of Royal Charter.
Cliff Or Slope	A named steep cliff or slope running from the clifftops down towards the sea.
Coach Station	A named place where coaches begin, break or end a journey and at which passengers may embark or disembark.
Coastal Headland	A named prominent mass of land raised above the surrounding tidal water on several sides.
Electricity Distribution	A named site used to handle electricity as part of the process of distributing electricity nationally.
Electricity Production	A named feature where electricity is generated on a large scale.
Estuary	A named partially enclosed area of sea, at the mouth of one or more rivers.

Code list: LocalTypeValue	
Value	**Definition**
Further Education	An educational establishment for academic and vocational qualifications below degree level undertaken after age 16.
Further Education, Higher or University Education	An educational establishment providing Further Education and Higher or University Education.
Further Education, Higher or University Education, Non State Secondary Education	An educational establishment providing Further Education, Higher or University Education, and Non State Secondary Education.
Further Education, Non State Primary Education	An educational establishment providing Further Education and Non State Primary Education.
Further Education, Non State Primary Education, Non State Secondary Education	An educational establishment providing Further Education, Non State Primary Education, and Non State Secondary Education.
Further Education, Non State Secondary Education	An educational establishment providing Further Education and Non State Secondary Education.
Further Education, Non State Secondary Education, Primary Education	An educational establishment providing Further Education, Non State Secondary Education, and Primary Education.
Further Education, Primary Education	An educational establishment providing Further Education and Primary Education.
Further Education, Primary Education, Secondary Education, Special Needs Education	An educational establishment providing Further Education, Primary Education, Secondary Education, and Special Needs Education.
Further Education, Primary Education, Special Needs Education	An educational establishment providing Further Education, Primary Education, and Special Needs Education.
Further Education, Secondary Education	An educational establishment providing Further Education and Secondary Education.
Further Education, Secondary Education, Special Needs Education	An educational establishment providing Further Education, Secondary Education, and Special Needs Education.
Further Education, Special Needs Education	An educational establishment providing Further Education and Special Needs Education.
Gas Distribution or Storage	A named site associated with the storing or supply of gas to users.
Group Of Islands	A named set of islands in the sea.
Hamlet	A settlement smaller than a village.
Harbour	A named area of naturally or artificially protected water on a coast where boats can anchor or moor.

Code list: LocalTypeValue	
Value	**Definition**
Helicopter Station	A named facility from where bodies such as the police or ambulance service operate helicopter operations.
Heliport	A named airport specifically designed for use by helicopters.
Higher or University Education	A named site where students study at National Qualifications Framework level 4 and above.
Hill Or Mountain	A named area of land that is higher than the surrounding land.
Hill Or Mountain Ranges	A named chain of mountains or hills bordered by highlands or separated from other mountains or hills by passes or valleys.
Hospice	A named medical facility to care for patients with terminal conditions.
Hospital	A named medical facility that provides second level care.
Hospital, Medical Care Accommodation	A named medical facility providing second level care and long-term medical accommodation.
Inland Water	A named area of permanent non-tidal water that cannot be given a more refined classification.
Island	A named area of land completely surrounded by water.
Medical Care Accommodation	A named site that provides both long-term medical accommodation and medical care.
Named Road	Distinctive name for a road.
Non State Primary Education	An educational establishment for children from the ages of seven to eleven that is not funded by the state.
Non State Primary Education, Non State Secondary Education	An educational establishment providing Non State Primary Education and Non State Secondary Education.
Non State Primary Education, Secondary Education	An educational establishment providing Non State Primary Education and Secondary Education.
Non State Primary Education, Special Needs Education	An educational establishment providing Non State Primary Education and Special Needs Education.
Non State Secondary Education	An educational establishment for children of eleven years and over, that is not funded by the state.
Non State Secondary Education, Primary Education	An educational establishment providing Non State Secondary Education and Primary Education.
Numbered Road	Department for Transport road number for Motorways, A Roads and B Roads.
Oil Distribution or Storage	A named depot where oil is stored.

Code list: LocalTypeValue	
Value	**Definition**
Oil Refining	A named facility where crude oil is refined.
Oil Terminal	A named storage point and distribution centre at the head of an oil pipeline.
Other Coastal Landform	A named area of landform on the coast, for example, a stand-alone rock or a steep-sided gully.
Other Landcover	A named area of land in rural areas.
Other Landform	A named prominent mass of land raised above the surrounding terrain on several sides.
Other Settlement	London Borough, Urban Development, Rural Locality, Crofting Locality or Named Group of Buildings.
Passenger Ferry Terminal	A named site facilitating the embarkation and disembarkation of pedestrian ferry passengers.
Passenger Ferry Terminal, Vehicular Ferry Terminal	A named site facilitating the embarkation and disembarkation of pedestrian ferry passengers, and ferry passengers and their vehicles.
Port Consisting of Docks and Nautical Berthing	A named complex with extensive infrastructure where a ship's cargo is loaded and unloaded, or vessels berthed.
Postcode	Royal Mail postcode, for example, SO16 0AS.
Primary Education	An educational establishment for children from the ages of seven to eleven that is funded principally by the state.
Primary Education, Secondary Education	An educational establishment providing Primary Education and Secondary Education.
Primary Education, Secondary Education, Special Needs Education	An educational establishment providing Primary Education, Secondary Education, and Special Needs Education.
Primary Education, Special Needs Education	An educational establishment providing Primary Education and Special Needs Education.
Railway	A named railway network.
Railway Station	A named site comprising a building and platforms by a light railway network or railway network where a light rail vehicle or train may stop to pick up goods or passengers. Excludes tram stations / stops.
Road User Services	A named area for supply of fuel, refreshments and so on near a road.

Code list: LocalTypeValue	
Value	**Definition**
Sea	A named area of sea that cannot be given a more refined classification.
Secondary Education	An educational establishment for children over 11 years of age.
Section Of Named Road	Section of road name inside a settlement, where the road passes through multiple settlements.
Section Of Numbered Road	Section of road number inside a town / city, where the road passes through multiple towns / cities.
Special Needs Education	A specialist school for the teaching of those with disabilities.
Spot Height	A named spot height, the location is usually, but not always a summit; for example, it may represent the highest point in an administrative area.
Suburban Area	A separately named urban area within a larger town or city.
Tidal Water	A named area of water affected by normal tidal action that does not fall into a more defined category.
Town	A centre of business and population with an area in excess of 2.5 square kilometres. Some smaller places are also historically considered towns, for example, where they are market or former county towns.
Tramway	A named system of guided busway(s). *Note: This is not for normal bus routes or a rapid transit system, running on rails (often incorporated into a road surface) and powered by electricity from overhead cables.*
Urban Greenspace	A named open (non-built up) area for recreation within or on the perimeter of an urban area.
Valley	A named natural linear depression, following the alignment of a natural watercourse.
Vehicular Ferry Terminal	A named site facilitating the embarkation and disembarkation of ferry passengers and their vehicles.
Vehicular Rail Terminal	A named facility where freight vehicles may be transferred to or from the rail network.
Village	Settlement smaller than a town, but larger than a hamlet.
Waterfall	A named steep fall of river or stream water, where its course is markedly and suddenly interrupted.
Wetland	A named area of land subject to regular and seasonal flooding.
Woodland Or Forest	A named area of natural or semi-natural tree cover.

2.4   Data types

«dataType» GeographicalName
Definition: Proper noun applied to a real-world entity.

Attribute: language
Definition: Language of the name, given as a three letters code, in accordance with either ISO 639-3 or ISO 639-5. *Note 1: More precisely, this definition refers to the language used by the community that uses the name.* *Note 2: The code "mul" for "multilingual" should not be used in general. However it can be used in rare cases, such as official names composed of two names in different languages. For example, "Vitoria-Gasteiz" is such a multilingual official name in Spain.* *Note 3: Even if this attribute is "voidable" for pragmatic reasons, it is of first importance in several use cases in the multi-language context of Europe.*

Type: CharacterString	Multiplicity: [1]

Attribute: nativeness
Definition: Information enabling one to acknowledge if the name is the one that is / was used in the area where the spatial object is situated at the instant when the name is / was in use.

Type: NativenessValue	Multiplicity: [1]

Attribute: nameStatus
Definition: Qualitative information enabling one to discern which credit should be given to the name with respect to its standardisation and / or its topicality. *Note: The Geographical Names application schema does not explicitly make a preference between different names (for example, official endonyms) of a specific real-world entity. The necessary information for making the preference (for example, the linguistic status of the administrative or geographic area in question), for a certain use case, must be obtained from other data or information sources. For example, the status of the language of the name may be known through queries on the geometries of named places against the geometry of administrative units recorded in a certain source with the language status information.*

Type: NameStatusValue	Multiplicity: [1]

Attribute: sourceOfName
Definition: Original data source from which the geographical name is taken from and integrated in the data set providing / publishing it. For some named spatial objects, it might refer again to the publishing data set if no other information is available. Examples: Gazetteer, Geographical Names Data Set.

Type: CharacterString	Multiplicity: [1]

«dataType» GeographicalName	
Attribute: pronunciation	
Definition: Proper, correct or standard (standard within the linguistic community concerned) pronunciation of the geographical name. Source: Adapted from [UNGEGN Manual 2006].	
Type: PronunciationOfName	Multiplicity: [1]
Attribute: spelling	
Definition: A proper way of writing the geographical name. *Note 1: Different spellings should only be used for names rendered in different scripts.* *Note 2: While a particular GeographicalName should only have one spelling in a given script, providing different spellings in the same script should be done through the provision of different geographical names associated with the same named place.*	
Type: SpellingOfName	Multiplicity: [1..*]
Attribute: grammaticalGender	
Definition: Class of nouns reflected in the behaviour of associated words. *Note: The attribute has cardinality [0..1] and is voidable, which means that:* • *In case the concept of grammatical gender has no sense for a given name (i.e. the attribute is not applicable), the attribute should not be provided.* • *In case the concept of grammatical gender has some sense for the name but is unknown, the attribute should be provided but void.*	
Type: GrammaticalGenderValue	Multiplicity: [0..1]
Attribute: grammaticalNumber	
Definition: Grammatical category of nouns that expresses count distinctions. *Note: The attribute has cardinality [0..1] and is voidable, which means that:* • *In case the concept of grammatical number has no sense for a given name (i.e. the attribute is not applicable), the attribute should not be provided.* • *In case the concept of grammatical number has some sense for the name but is unknown, the attribute should be provided but void.*	
Type: GrammaticalNumberValue	Multiplicity: [0..1]

«dataType» Identifier

Definition: External unique object identifier published by the responsible body, which may be used by external applications to reference the spatial object.

Note 1: External object identifiers are distinct from thematic object identifiers.

Note 2: The voidable version identifier attribute is not part of the unique identifier of a spatial object and may be used to distinguish two versions of the same spatial object.

Note 3: The unique identifier will not change during the lifetime of a spatial object.

Attribute: localId

Definition: A local identifier, assigned by the data provider. The local identifier is unique within the namespace, that is, no other spatial object carries the same unique identifier.

Note: It is the responsibility of the data provider to guarantee uniqueness of the local identifier within the namespace.

Type: CharacterString	Multiplicity: [1]

Attribute: namespace

Definition: Namespace uniquely identifying the data source of the spatial object.

Note: The namespace value will be owned by the data provider of the spatial object and will be registered in the INSPIRE External Object Identifier Namespaces Register.

Type: CharacterString	Multiplicity: [1]

Attribute: versionId

Definition: The identifier of the particular version of the spatial object, with a maximum length of 25 characters. If the specification of a spatial object type with an external object identifier includes lifecycle information, the version identifier is used to distinguish between the different versions of a spatial object. Within the set of all versions of a spatial object, the version identifier is unique.

Note 1: The maximum length has been selected to allow for time stamps based on ISO 8601, for example, "2007-02-12T12:12:12+05:30" as the version identifier.

Note 2: The property is void if the spatial data set does not distinguish between different versions of the spatial object; it is missing if the spatial object type does not support any lifecycle information.

Type: CharacterString	Multiplicity: [0..1]

2.5   Local Type

OS Open Names extends the INSPIRE Geographical Names model by adding a LOCAL_TYPE which creates a useful hierarchy of themes to classify and identify features quickly and easily. The product contains the following themes:

Table 2:   The themes and Local_Types included in OS Open Names.

Type	Local_Type
hydrography	Bay
hydrography	Channel
hydrography	Estuary
hydrography	Inland Water
hydrography	Sea
hydrography	Tidal Water
hydrography	Waterfall
landcover	Beach
landcover	Other Landcover
landcover	Urban Greenspace
landcover	Wetland
landcover	Woodland Or Forest
landform	Cirque Or Hollow
landform	Cliff Or Slope
landform	Coastal Headland
landform	Group Of Islands
landform	Hill Or Mountain
landform	Hill Or Mountain Ranges
landform	Island
landform	Other Coastal Landform
landform	Other Landform
landform	Spot Height
landform	Valley
other	Chemical Works
other	Electricity Distribution
other	Electricity Production

Type	Local_Type
other	Further Education
other	Further Education, Higher or University Education
other	Further Education, Non State Primary Education, Non State Secondary Education
other	Further Education, Non State Secondary Education
other	Further Education, Primary Education, Secondary Education, Special Needs Education
other	Further Education, Secondary Education
other	Further Education, Special Needs Education
other	Gas Distribution or Storage
other	Higher or University Education
other	Hospice
other	Hospital
other	Hospital, Medical Care Accommodation
other	Medical Care Accommodation
other	Non State Primary Education
other	Non State Primary Education, Non State Secondary Education
other	Non State Secondary Education
other	Oil Distribution or Storage
other	Oil Refining
other	Oil Terminal
other	Postcode
other	Primary Education
other	Primary Education, Secondary Education
other	Primary Education, Special Needs Education
other	Secondary Education
other	Special Needs Education
populatedPlace	City
populatedPlace	Hamlet
populatedPlace	Other Settlement
populatedPlace	Suburban Area
populatedPlace	Town
populatedPlace	Village

Type	Local_Type
transportNetwork	Airfield
transportNetwork	Airport
transportNetwork	Bus Station
transportNetwork	Bus Station, Coach Station
transportNetwork	Coach Station
transportNetwork	Harbour
transportNetwork	Helicopter Station
transportNetwork	Heliport
transportNetwork	Named Road
transportNetwork	Numbered Road
transportNetwork	Passenger Ferry Terminal
transportNetwork	Passenger Ferry Terminal, Vehicular Ferry Terminal
transportNetwork	Port Consisting of Docks and Nautical Berthing
transportNetwork	Railway
transportNetwork	Railway Station
transportNetwork	Road User Services
transportNetwork	Section Of Named Road
transportNetwork	Section Of Numbered Road
transportNetwork	Tramway
transportNetwork	Vehicular Ferry Terminal
transportNetwork	Vehicular Rail Terminal

3. Supply formats overview

3.1 CSV

A comma-separated values (CSV) file is a common interchange format for spreadsheets and databases that facilitates the simplistic use of data. Each field is either textual (for example, SO515RU) or numeric (for example, 21). Within the CSV, each field is separated from the next by a comma. This method of representation can also be referred to as a comma-delimited file (CDF). CSV file format is universally supported for easy ingestion into all major database products.

Note: CSV files are designed to be opened in a database or GIS application and opening them in other software applications might corrupt the data. In particular, Excel has a row limit that is easily exceeded by large CSV files. We recommend that you load CSV files directly into a database or GIS, rather than trying to open these files in Excel.

3.2 GML

OS Open Names is supplied in Geography Markup Language (GML) version 3.2.1. It is recommended that you read this sub-section in conjunction with the Open Geospatial Consortium (OGC) document 'Geography Markup Language v3.2.1' (https://portal.ogc.org/files/?artifact_id=20509).

An understanding of XML (eXtensible Mark-up Language) and XML schemas is required. The XML specifications that GML is based on are available from the World Wide Web Consortium (W3C) website (http://www.w3.org).

3.2.1 Schema overview and location

XML schemas are used to define and validate the format and content of GML. The GML 3.2.1 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 Ordnance Survey application schema OSOpenNames.xsd (https://www.ordnancesurvey.co.uk/xml/open/names/1.0/OSOpenNames.xsd), which is referenced by the data, is available on the OS website. It imports the GML 3.2.1 schemas which rely on XML as defined by W3C at: http://www.w3.org/XML/1998/namespace.html.

3.3   GeoPackage

GeoPackage (*.gpkg) is an open, non-proprietary, platform-independent, standards based, data format for geographic information systems (GIS), as defined by the Open Geospatial Consortium (OGC). It is designed to be a lightweight format that can contain large amounts of varied and complex data in a single, easy-to-distribute and ready-to-use file. GeoPackage is natively supported by numerous software applications.

GeoPackage offer users the following benefits:

•   The single file is easy to transfer and offers the end-user a rich experience.

•   Attribute names are not limited in length, making the format user friendly.

•   The file size limit is large at 140 TB.

Note: A file size limit could be imposed by the file system to which the file is written.

•   It supports raster, vector and database formats, making it a highly versatile solution.

•   It is an OGC standard.

•   In most cases, it is a plug-in-and-play format.

For information on how to open, use and understand a GeoPackage dataset, please refer to our 'Getting Started with GeoPackage' guide, which is available from the OS Open Names Product Support page on the OS website (https://www.ordnancesurvey.co.uk/business-government/tools-support/open-map-names-support). For further information on GeoPackage, please see the GeoPackage website (https://www.geopackage.org/).

3.3.1   GeoPackage format changes

From January 2023, the following attribute names have been changed from Title case to snake case in GeoPackage format:

Table 3:   GeoPackage attribute name changes.

GeoPackage attribute name prior to January 2023	GeoPackage attribute name after January 2023
FID	Fid
ID	Id
NAMES_URI	names_uri
NAME1	name1
NAME1_LANG	name1_lang
NAME2	name2
NAME2_LANG	name2_lang
TYPE	type

GeoPackage attribute name prior to January 2023	GeoPackage attribute name after January 2023
LOCAL_TYPE	local_type
MOST_DETAIL_VIEW_RES	most_detail_view_res
LEAST_DETAIL_VIEW_RES	least_detail_view_res
MBR_XMIN	mbr_xmin
MBR_YMIN	mbr_ymin
MBR_XMAX	mbr_xmax
MBR_YMAX	mbr_ymax
POSTCODE_DISTRICT	postcode_district
POSTCODE_DISTRICT_URI	postcode_district_uri
POPULATED_PLACE	populated_place
POPULATED_PLACE_URI	populated_place_uri
POPULATED_PLACE_TYPE	populated_place_type
DISTRICT_BOROUGH	district_borough
DISTRICT_BOROUGH_URI	district_borough_uri
DISTRICT_BOROUGH_TYPE	district_borough_type
COUNTY_UNITARY	county_unitary
COUNTY_UNITARY_URI	county_unitary_uri
COUNTY_UNITARY_TYPE	county_unitary_type
REGION	region
REGION_URI	region_uri
COUNTRY	country
COUNRTY_URI	country_uri
RELATED_SPATIAL_OBJECT	related_spatial_object
SAME_AS_DBPEDIA	same_as_dbpedia
SAME_AS_GEONAMES	same_as_geonames
Geom	geometry

3.4   Attribute naming format comparison

The naming of attributes will be different between the various formats due to the differing naming conventions associated with each format (for example, presence of underscores, character limitations and capitalisation). Therefore, the following table maps the differing format attribute names to one another.

Note: A few attributes are not mapped to all formats; the absence of an attribute field is represented by 'N/A' in the table. For example, the Fid attribute is only available in GeoPackage format, so 'N/A' is noted in the CSV and GML cells in the table for that attribute.

Table 4:   OS Open Names attribute naming differences between CSV, GeoPackage and GML.

CSV attribute	GeoPackage attribute	GML attribute
N/A	Fid	N/A
Id	Id	<names:NamedPlace gml:id>
names_uri	names_uri	<gml:identifier>
N/A	N/A	<gn:inspireId>
N/A	N/A	<gn:beginLifespanVersion>
N/A	N/A	<gn:endLifespanVersion>
name1	name1	<gn:spelling>
name1_lang	name1_lang	<gn:language>
name2	name2	<gn:spelling>
name2_lang	name2_lang	<gn:language>
N/A	N/A	<gn:sourceOfName>
N/A	N/A	<gn:nativeness>
N/A	N/A	<gn:nameStatus>
type	type	<gn:type>
local_type	local_type	<gn:localType>
GEOMETRY_X	geometry	<gn:geometry>
GEOMETRY_Y	geometry	<gn:geometry>
most_detail_view_res	most_detail_view_res	<gn:mostDetailedViewingResolution>
least_detail_view_res	least_detail_view_res	<gn:leastDetailedViewingResolution>
mbr_xmin	mbr_xmin	<gml:boundedBy>
mbr_ymin	mbr_ymin	<gml:boundedBy>
mbr_xmax	mbr_xmax	<gml:boundedBy>
mbr_ymax	mbr_ymax	<gml:boundedBy>

CSV attribute	GeoPackage attribute	GML attribute
postcode_district	postcode_district	\<names: inPostcodeDistrict xlink:title>
postcode_district_uri	postcode_district_uri	\<names: inPostcodeDistrict xlink:href>
populated_place	populated_place	\<names:inPopulatedPlace xlink:title>
populated_place_uri	populated_place_uri	\<names:inPopulatedPlace xlink:href>
populated_place_type	populated_place_type	\<names:inPopulatedPlace xlink:role>
district_borough	district_borough	\<names:inDistrictOrBorough xlink:title>
district_borough_uri	district_borough_uri	\<names:inDistrictOrBorough xlink:href>
district_borough_type	district_borough_type	\<names:inDistrictOrBorough xlink:role>
county_unitary	county_unitary	\<names:in CountyOrUnitaryAuthority xlink:title>
county_unitary_uri	county_unitary_uri	\<names:in CountyOrUnitaryAuthority xlink:href>
county_unitary_type	county_unitary_type	\<names:in CountyOrUnitaryAuthority xlink:role>
region	region	\<names:inEuropeanRegion xlink:title>
region_uri	region_uri	\<names:inEuropeanRegion xlink:href>
country	country	\<names:inCountry xlink:title>
country_uri	country_uri	\<names:inCountry xlink:href>
related_spatial_object	related_spatial_object	\<gn:relatedSpatialObject>
same_as_dbpedia	same_as_dbpedia	\<names:sameAsDBPedia xlink:href>
same_as_geonames	same_as_geonames	\<names:sameAsGeoNames xlink:href>