ORDNANCE SURVEY GB

AddressBase Core - Technical Specification

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Version History

Version	Date	Description
1.0	01/07/2020	Initial release

Purpose of this Document

This is the Technical Specification (from now on referred to as the 'Specification') for the AddressBase Core product. This Specification provides information on the contents and structure of this product. For greater insight into the product and its potential applications, please refer to the Getting Started Guide.

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1. Introduction

AddressBase Core is a simple, accessible addressing data product giving Plug and Play access to Great Britain addressing data and additional attribution, without being time-consuming or complex. It provides live addressing records for England, Wales and Scotland based on Local Authority holdings of the Local Land and Property Gazetteer (LLPG). Other attribution includes secondary level classifications (detailing the use and type of an address) and a representative point code describing the positional quality of coordinates.

1.1 Data formats

The AddressBase Core product will be distributed as a Comma-Separated Value (CSV) file or GeoPackage (GPKG). CSV files can either be supplied as a Full Supply or Change Only Update (COU), whereas GeoPackage is only available as Full Supply.

CSV

The CSV format of AddressBase Core means:

1. Column headers will be included in the file.
2. There will be one record per line in each file.
3. Fields will be separated by commas.
4. No comma will be placed at the end of each row in the file.
5. Records will be terminated by Carriage Return / Line Feed.

For customer orders being placed for the entirety of Great Britain, one file will be produced containing all records.

GeoPackage

GeoPackage (GPKG) is an open, standards-based, platform-independent data format for transferring geospatial information 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 offers the following benefits:

1. The single file is easy to transfer and offers the end-user a rich experience.
2. Attribute names are not limited in length making it customer friendly.
3. No file size limit, so lots of data can be easily accommodated.
4. Supports raster, vector and database formats making it a highly versatile solution.
5. Conforms to OGC standard.
6. In most cases, it is a Plug and Play format.

1.2 Supply and update

The primary supply mechanism of AddressBase Core will be a full Great Britain Set. A single file will be provided containing all records with headers already included (CSV) or the structure already defined (GeoPackage). This supply is known as a Managed Great Britain Set (MGBS).

All customers are also able to take a Full Supply or COU (please note COUs are only available with the CSV file format).

1.3 Coordinate Reference System (CRS)

AddressBase Core has two Coordinate Reference Systems (CRS) present within the data:

1. British National Grid (BNG).
2. European Terrestrial Reference System 89 (ETRS89).

BNG uses the OSGB36 geodetic datum and a single Transverse Mercator projection for the whole of Great Britain. Positions on this projection are described using Easting and Northing coordinates in units of metres. The BNG is a horizontal spatial reference system only; it does not specify a vertical (height) reference system.

ETRS89 is the EU recommended frame of reference for European data and is represented as Latitude and Longitude values. ETRS89 is a horizontal spatial reference system only; it does not specify a vertical (height) reference system.

View our guide to coordinate systems in Great Britain.

1.4 Unique Property Reference Number (UPRN)

A UPRN is a unique numeric identifier for every addressable location in Great Britain. The UPRN is the persistent identifier providing consistency across the AddressBase product range.

Each address record has a UPRN, assigned by Local Authorities in England, Wales and Scotland or Ordnance Survey depending on the type of address. This is the primary key of the AddressBase Core product.

Throughout its lifecycle, information on the address of a property can change. This may be due to a change of name, change of use, or the eventual demolition of the property. Independent of any changes being made the UPRN associated to an address is never changed, meaning the unique identifier remains persistent and reliable.

2. AddressBase Core Structure

2.1 Features

This section describes the features which make up the AddressBase Core product, giving the following information about each attribute:

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

Condition
A condition associated with this attribute. (Optional)

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

Size
The maximum length of the values in the attribute.

Multiplicity
Describes how many times this element is expected to be populated in the data. An attribute may be optional or mandatory within the AddressBase Core product. These are denoted by:

1. '1' – Mandatory - There must be a value.
2. '0..1' – Optional – If populated a maximum of one attribute will be returned.

These values may be used in combination.

FID (only in GeoPackage)		
Definition: A non-persistent integer which is autogenerated and is required within the OGC GeoPackage format.		
Type: Integer		**Multiplicity**: [1]
UPRN		
Definition: Unique Property Reference Number (UPRN) assigned by the LLPG Custodian or Ordnance Survey.		
Type: Integer	**Size**: 12	**Multiplicity**: [1]
PARENT_UPRN		
Definition: UPRN of the parent Record if a parent-child relationship exists.		
Type: Integer	**Size**: 12	**Multiplicity**: [0..1]
UDPRN		
Definition: Royal Mail's Unique Delivery Point Reference Number (UDPRN).		
Type: Integer	**Size**: 8	**Multiplicity**: [0..1]

USRN		
Definition: Unique Street Reference Number assigned by the Street Name and Numbering Custodian OR Ordnance Survey depending on the address record.		
Type: Integer	**Size**: 8	**Multiplicity**: [1]
TOID		
Definition: The Topographic Identifier taken from OS MasterMap Topography Layer. This TOID is assigned to the UPRN by performing a spatial intersection between the two identifiers. It consists of the letters 'osgb' and is followed by up to sixteen digits.		
Type: varchar	**Size**: 20	**Multiplicity**: [0..1]
CLASSIFICATION_CODE		
Definition: A code that describes the classification of the address record to a maximum of a secondary level.		
Type: varchar	**Size**: 4	**Multiplicity**: [1]
EASTING		
Definition: A value in metres defining the x location in accordance with the British National Grid.		
Type: Float	**Size:** (precision, scale) – (8, 2)	**Multiplicity**: [1]
NORTHING		
Definition: A value in metres defining the y location in accordance with the British National Grid.		
Type: Float	**Size:**(precision, scale) – (9, 2)	**Multiplicity**: [1]
LATITUDE		
Definition: A value defining the Latitude location in accordance with the ETRS89 coordinate reference system.		
Type: Float	**Size:** (precision, scale) – (9, 7)	**Multiplicity**: [1]
LONGITUDE		
Definition: A value defining the Longitude location in accordance with the ETRS89 coordinate reference system.		
Type: Float	**Size**: (precision, scale) – (8, 7)	**Multiplicity**: [1]
RPC		
Definition: Representative Point Code: this describes the accuracy of the coordinate that has been allocated to the UPRN as indicated by the Local Authority and enhanced using large scale OS data.		
Type: Integer	**Size**: 1	**Multiplicity**: [1]
LAST_UPDATE_DATE		
Definition: The latest date on which any of the attributes on this record were last changed.		
Type: Date		**Multiplicity**: [1]
SINGLE_LINE_ADDRESS		
Definition:		

A single attribute containing text concatenation of the address elements separated by a comma.		
Type: varchar	**Size**: 500	**Multiplicity**: [1]
PO_BOX		
Definition: Text concatenation of 'PO BOX' and the Post Office Box (PO Box) number or 'BFPO' and the British Forces Post Office number.		
Type: varchar	**Size**: 13	**Multiplicity**: [0..1]
ORGANISATION		
Definition: The organisation name is the business name given, when appropriate, to an address record.		
Type: varchar	**Size**: 100	**Multiplicity**: [0..1]
SUB_BUILDING		
Definition: The sub-building name and/or number for the address record.		
Type: varchar	**Size**: 110	**Multiplicity**: [0..1]
BUILDING_NAME		
Definition: The building name is a description applied to a single address or a group of addresses.		
Type: varchar	**Size**: 110	**Multiplicity**: [0..1]
BUILDING_NUMBER		
Definition: The building number is a number or range of numbers given to a single address or a group of addresses.		
Type: varchar	**Size**: 13	**Multiplicity**: [0..1]
STREET_NAME		
Definition: Street / Road name for the address record.		
Type: varchar	**Size**: 100	**Multiplicity**: [0..1]
LOCALITY		
Definition: A locality defines an area or geographical identifier within a town, village or hamlet. Locality represents the lower level geographical area. The locality field should be used in conjunction with the town name and street description fields to uniquely identify geographic area where there may be more than one within an administrative area.		
Type: varchar	**Size**: 35	**Multiplicity**: [0..1]
TOWN_NAME		
Definition: Geographical town name assigned by the Local Authority. Please note this can be different from the Post Town value assigned by Royal Mail.		
Type: varchar	**Size:** 35	**Multiplicity**: [0..1]
POST_TOWN		
Definition: The town or city in which the Royal Mail sorting office is located which services this address record.		

Condition: POST_TOWN is not populated if this is the same as TOWN_NAME.		
Type: varchar	**Size:** 30	**Multiplicity**: [0..1]
ISLAND		
Definition: Third level of geographic area name to record island names where appropriate.		
Type: varchar	**Size:** 50	**Multiplicity**: [0..1]
POSTCODE		
Definition: A postcode assigned by Royal Mail for the address record.		
Type: varchar	**Size**: 8	**Multiplicity**: [1]
DELIVERY_POINT_SUFFIX		
Definition: A two-character code uniquely identifying an individual delivery point within a postcode, assigned by Royal Mail.		
Type: varchar	**Size**: 2	**Multiplicity**: [0..1]
GSS_CODE		
Definition: The Office for National Statistics Governmental Statistical Service (GSS) code representing the contributing Local Authority.		
Type: varchar	**Size**: 9	**Multiplicity**: [0..1]
CHANGE_CODE		
Definition: Type of record change – please see Section 2.2 for more information.		
Type: char	**Size**: 1	**Multiplicity**: [1]

2.2 Codes and Enumerations

RPC_Code

This enumeration is used in association with the attribute "RPC". It identifies the accuracy value of the coordinates allocated to the address.

Enumeration: RPCCode		
Value	Description	Implementation Notes
1	Central Internal Position	The address seed is contained within an OS MasterMap Topography Layer building and within 2.5m of its calculated centre. Or The seed is in the best possible position based on the nature of the premises e.g. Development Land, House Boat, Wind Farm.

2	General Internal Position	The address seed is contained within an OS MasterMap Topography Layer building but is more than 2.5m away from its calculated centre. Or The seed is in an internal position based on the nature of the premises e.g. Development Land, House Boat.
3	Transitional Position	The address seed has been changed from under development to live in the last six months. It has been captured to a high level of positional accuracy, but pending large scale mapping updates still may be moved.
4	Street Location	The address seed is plotted in accordance with the declared street start or end coordinates.
5	Postcode Unit Position	The address seed has been captured to Postcode Unit level. It will be updated when more information becomes available.
9	Low accuracy – marked for priority review	This address seed has been captured to a lower level of accuracy and will be updated as a priority over the coming releases.

Change_Code

This enumeration is used in association with the attribute "CHANGE_CODE". This enumeration identifies the type of change that has been made to a feature. The change type must be set when a feature is inserted, updated or deleted. Please see section 3 for more information.

Enumeration: ChangeTypeCode	
Value	**Description**
I	Insert
U	Update
D	Delete

Date

The "LAST_UPDATE_DATE" is the only date in the product and defines when the record was last updated in the following format.

Value	Type	Notes
2020-06-01	Date	Date columns will follow the structure YYYY-MM-DD

3. COU Update

As detailed in section 1.1, AddressBase Core is available as a Full Supply or Change Only Update (COU) supply. A COU supply of data contains records or files that have changed between product refresh cycles. The primary benefit in supplying data in this way is that volumes are smaller therefore reducing the amount of data that requires processing when compared to a Full Supply.

COU data enables you to identify three types of change if they are using the Managed Great Britain Sets of data:

1. Deletes (CHANGE_TYPE 'D') are objects that have ceased to exist in your area of interest since the last product refresh.

2. Inserts (CHANGE_TYPE 'I') are objects that have been newly inserted into your area of interest since the last product refresh.

3. Updates (CHANGE_TYPE 'U') are objects that have been updated in your area of interest since the last product refresh.

3.1 Archiving

When users are Deleting, Inserting or Updating features it is up to you to consider their archiving requirements. If deleted records are important to your business requirements you must take appropriate action to archive previous records.

4. Example Record

4.1 CSV Supply

Original Supply

UPRN,PARENT_UPRN,UDPRN,USRN,TOID,CLASS,EASTING,NORTHING,LATITUDE,LONGITUDE,RPC,LAST_UPDATE_DATE,SINGLE_LINE_ADDRESS,PO_BOX,ORGANISATION,SUB_BUILDING,BUILDING_NAME,BUILDING_NUMBER,STREET_NAME,LOCALITY,TOWN_NAME,POST_TOWN,ISLAND,POSTCODE,DELIVERY_POINT_SUFFIX,GSS_CODE,CHANGE_CODE

200010019924,,52126562,40020087,"osgb1000002682081995","C",437318,115539,50.9380858,-1.4702581,2,2020-01-06,"ORDNANCE SURVEY, 4 ADANAC DRIVE, NURSLING, SOUTHAMPTON, SO16 0AS","","ORDNANCE SURVEY","","","4","ADANAC DRIVE","","NURSLING","SOUTHAMPTON","","SO16 0AS","1A","E07000093","I"

COU Supply

Changed fields are highlighted in red.

UPRN,PARENT_UPRN,UDPRN,USRN,TOID,CLASS,EASTING,NORTHING,LATITUDE,LONGITUDE,RPC,LAST_UPDATE_DATE,SINGLE_LINE_ADDRESS,PO_BOX,ORGANISATION,SUB_BUILDING,BUILDING_NAME,BUILDING_NUMBER,STREET_NAME,LOCALITY,TOWN_NAME,POST_TOWN,ISLAND,POSTCODE,DELIVERY_POINT_SUFFIX,GSS_CODE,CHANGE_CODE

200010019924,,52126562,40020087,"osgb1000002682081995","CO",437318,115539,50.9380858,-1.4702581,1,2020-01-06,"ORDNANCE SURVEY, 4 ADANAC DRIVE, NURSLING, SOUTHAMPTON, SO16 0AS","","ORDNANCE SURVEY","","","4","ADANAC DRIVE","","NURSLING","SOUTHAMPTON","","SO16 0AS","1A","E07000093","U"

Appendix 1 – Glossary

Terms & Abbreviations

AddressBase	The addressing product family produced by Ordnance Survey and GeoPlace, and created using multiple authoritative data sources.
BNG	British National Grid (EPSG 27700) is a map coordinate projection system commonly used in Great Britain.
CRS	Coordinate Reference System, the most common of which is BNG and Web Mercator.
CSV	Comma-Separated Value, a type of data format.
GeoPackage	A type of data packaging designed for use within a GIS which allows for geospatial data to be appended to other data in a similar manner to SQL lite.
GIS	Geographic Information System.
GSS	Government Statistical Service.
LLPG	Local Land and Property Gazetteer.
TOID	Topographic Identifier.
UDPRN	Unique Delivery Point Reference Number.
UPRN	Unique Property Reference Number.
USRN	Unique Street Reference Number.

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