



Code-Point[®] Open

User guide and technical specification

Code-Point Open

User guide

Contents

Section	Page no
Preface	3
Contact details	3
Use of the product.....	3
Purpose and disclaimer	3
Copyright in this guide	3
Data copyright and other intellectual property rights	4
Trademarks.....	4
Chapter 1 Introduction	5
Using this user guide	5
Code-Point® Open features	5
Suggested applications for Code- Point Open.....	5
Chapter 2 Overview of Code-Point Open	6
Data.....	6
Basic principles	6
Application overview	7
Uses of Code-Point Open	7
Scenarios	8
Chapter 3 Code-Point Open explained	9
Postcode	9
Format.....	9
Position	9
Code-Point Open location coordinate (CPLC).....	9
Positional quality indicator (PQI).....	9
Attributes	10
Comparison of Code-Point Open and Code-Point attributes	10
Administrative and health authority codes	11
Lineage	11
Positional accuracy	11
Attribute accuracy	11
Logical consistency.....	11
Completeness	11
Chapter 4 Creating single-space postcodes.....	12
Centroids only	12
Outward and inward bound representation	12
Single-space postcodes.....	12
CSV single-space postcodes using Microsoft Excel and Access	12
MID/MIF and TAB single-space postcodes using MapInfo.....	13
Shapefile single-space postcodes using ESRI ArcGIS®	14
Chapter 5 Data measures.....	16
Annexe A Metadata.....	17
Annexe B Product and service performance report form	18

v1.7 – 11/2012

D05300_38

Preface

This user guide (hereafter referred to as the guide) is designed to provide an overview of Code-Point Open (hereafter referred to as the product) and it gives guidelines and advice on how a customer might derive the maximum benefit from the product. It assumes a general knowledge of geographic information. If you find an error or omission in this guide, or otherwise wish to make a comment or suggestion as to how we can improve it, please contact us at the address shown below or complete the product and service performance report form at [annexe B](#) and return it to us.

Contact details

Our Customer Service Centre will be pleased to deal with your enquiries:

Customer Service Centre
Ordnance Survey
Adanac Drive
SOUTHAMPTON
United Kingdom
SO16 0AS

General enquiries (calls charged at local rate): +44 (0)8456 05 05 05

Dedicated Welsh Language HelpLine: 08456 05 05 04

Textphone (deaf and hard of hearing users only please): +44 (0)23 8005 6146

customerservices@ordnancesurvey.co.uk

www.ordnancesurvey.co.uk

This document has been screened in accordance with Ordnance Survey's *Equality scheme*. If you have difficulty reading this information in its current format and would like to find out how to access it in a different format (Braille, large print, computer disk or in another language) please contact us on: +44 (0)8456 05 05 05.

Use of the product

The product is made available to you and your organisation on the terms of the OS OpenData Licence at www.ordnancesurvey.co.uk/opendata/licence.

If there is any inconsistency between the terms of the licence and this guide, the terms of the licence prevail.

Purpose and disclaimer

This guide is provided for guidance only and does not constitute any warranty, representation, undertaking, commitment or obligation (express or implied) about the product or its suitability for any particular purpose. It is your responsibility to ensure that this product is suitable for your intended purpose.

Ordnance Survey does not accept any liability (whether for breach of contract, negligence or otherwise) for any loss or liability you or any third party may suffer in relying on this guide and any guidance, suggestion, advice or explanation provided in it. Ordnance Survey's liability to you in relation to the product is limited as set out in the OS OpenData Licence.

We may change the information in this guide at any time without notice.

We do not accept responsibility for the content of any third party websites referenced in or accessed through this guide or through the Ordnance Survey website.

Copyright in this guide

This guide is © Crown copyright 2011.

You may copy or distribute any part of this guide to support the use of OS OpenData, including for your personal use, use in your organisation or business, or for use with, or incorporation in, your product or application.

Data copyright and other intellectual property rights

The Crown (or, where applicable, Ordnance Survey's suppliers) owns the intellectual property rights in the data contained in this product. You are free to use the product on the terms of the OS OpenData Licence, but must acknowledge the source of the data by including the following attribution statements:

Contains Ordnance Survey data © Crown copyright and database right 2010.

Contains Royal Mail data © Royal Mail copyright and database right 2010

Contains National Statistics data © Crown copyright and database right 2011

Trademarks

Ordnance Survey, the OS Symbol, ADDRESS-POINT, Code-Point, Gridlink, OS Street View and OS MasterMap are registered trademarks and Boundary-Line is a trademark of Ordnance Survey, the national mapping agency of Great Britain.

Adobe and Reader are registered trademarks of Adobe Systems Incorporated.

ArcGIS and ESRI are registered trademarks of Environmental Systems Research Institute, Inc.

NHS is a trademark of the Department of Health.

Land & Property Services is a registered trademark of Department of Finance and Personnel, Northern Ireland.

MapInfo is a registered trademark of MapInfo Corporation.

Microsoft, Access and Excel are registered trademarks of Microsoft Corporation.

Postzon, PO Box and Royal Mail are registered trademarks of Royal Mail Group Ltd.

Chapter 1 Introduction

Using this user guide

A glossary of words and terms used in this user guide can be found at [annexe A](#) of the technical specification.

Code-Point[®] Open features

With each coordinated point, Code-Point Open provides:

- a postcode;
- a [positional quality indicator](#) (PQI), which indicates the quality of the data underlying the Code-Point Open location coordinate (CPLC);
- the country indicator (either England, Scotland or Wales);
- the National Health Service (NHS[®]) region and area codes; and
- the local government county, district and ward codes.

Suggested applications for Code- Point Open

Code-Point Open can be used to display and analyse any data collected at the postcode level. This can enable a variety of applications, including:

- site location;
- web enable searches;
- market analysis and profiling;
- health and epidemiology;
- resource allocation;
- end-to-end journey route planning when used with an appropriate road network;
- socio-economic profiling; and
- sales targeting.

Government Statistical Service (GSS) codes

These codes are a unique system of referencing for administrative units.

The Office for National Statistics (ONS) has reconfigured its GSS coding structure (providing a unique system of referencing for administrative units and statistical geographies) to a new nine-character alphanumeric format, replacing the former alphanumeric format (up to six characters). This was fully implemented on 1 January 2011 by ONS.

Where new codes have been allocated, they should be used in all exchanges of statistics and published outputs that normally include the statistical codes.

The codes are allocated by ONS for England and Wales and by NRS for Scottish areas.

The GSS codes were imported into the August 2011 release of Code-Point Open.

The code is blank when the entity does not have a code.

The Welsh Local Health Boards aren't included in Code-Point Open as they are a different 'level' of geography to health areas (Strategic Health Authorities and Health Boards) – they equate to Primary Care Trusts in England or Community Health Partnerships in Scotland (which aren't represented in the data).

NOTE: the new nine-figure coding format means that there is no longer a relationship between principal areas and their sub-divisions, for example, Hampshire County was 24, New Forest District was 24UJ and Milford Ward 24UJHM. Types of units will be distinguished by the first three alphanumeric characters (entity code) E for England and so on, 10 counties, 07 districts, 05 wards and so on. New administrations will be allocated the next available number within its type.

Application overview

Uses of Code-Point Open

Code-Point Open forms a nationally-consistent postcode reference and is a standard link between databases and GIS. Identified below are some of the applications for Code-Point Open:

Citizen services

- Website searches
- Location finding
- Tourism
- Accessing public facilities
- Find my nearest

Government

- Statistical demographic analysis
- Crime analysis
- Flood warnings
- Pollution monitoring

Health

- Targeting of services to population needs
- Resource allocation
- Epidemiology
- Analysis of 'What if...?' scenarios

Insurance

- Market analysis and profiling
- Geological and flood-risk analysis
- Personal and household risk assessment
- Incident area management

Retail

- Sales analysis by store
- Competitor analysis
- Customer buying profiles
- Store location

Transport

- Satellite navigation – end-to-end journey planning using the postcodes and appropriate road network data

Utilities

- Market profiling
- Consumption analysis
- Pressure-zone analysis
- Location finding

Scenarios

Medical research for health authorities

It is necessary for health authorities to be able to analyse and identify the effects and potential implications of contamination. Is the incidence of bronchitis uneven throughout a health authority's area?

Customer survey for market-research purposes

A questionnaire has been distributed to all houses within a large geographical area. The results and the relationships between groups of customers need to be analysed.

Incident analysis for emergency services

An ambulance service wishes to assess the efficiency and value of various mobile unit locations in reducing call-response times.

Insurance for financial services

An insurance company has been asked to quote for a certain postcode near a river. Used with other data this indicates that the postcodes fall within a flood plain and could therefore realise a higher premium.

Chapter 3 Code-Point Open explained

Postcode

Postcodes are an alphanumeric abbreviated form of address. Postcode units are unique references and identify an average of 15 addresses. In some cases, where an address receives a substantial amount of mail, a postcode will apply to only one address. The maximum number of addresses in a postcode is 100.

The postcode is held in Code-Point Open as a seven-character field. Although, when used in an address, the inward code (incode) should be separated from the outward code (outcode) by a single space, within Code-Point Open data, there may be 0, 1 or 2 spaces between these elements of the postcode. The following is a list of the valid formats of postcode held. An A indicates an alphabetic character; an N indicates a numeric character.

Format

Outcode	Incode	Example postcode	Example as held in Code-Point Open
AN	NAA	M2 5BQ	M2 5BQ
ANN	NAA	M34 3AB	M34 3AB
AAN	NAA	DN5 7XY	DN5 7XY
AANN	NAA	DN16 9AA	DN169AA
ANA	NAA	W1A 4WW	W1A4WW
AANA	NAA	EC1A 1HQ	EC1A1HQ

Postcode example

Area	District	Sector	Unit
KY	12	8	UP

Please refer to the glossary for a further description of [postcode](#).

Position

Code-Point Open location coordinate (CPLC)

Code-Point Open provides an [NGref](#), to a resolution of 1 metre, for each postcode unit in Great Britain and is known as the CPLC. A CPLC is normally allocated to a point that falls within the extent of the postcode unit. The point is given the ADDRESS-POINT[®] coordinates of the nearest delivery point to the calculated mean position of the delivery points in the unit. A lower positional quality CPLC will be allocated to postcode units awaiting a surveyed position, or that relate to addresses that will not have a surveyed position.

Where several postcode units apply to one surveyed position, for example, a block of flats or offices, there is an identical CPLC for each. However, there may be instances where the CPLC position is imprecise or approximate, due to the manual allocation by Royal Mail[®] of a postcode outside the recognised geographic extent of that postcode.

When discovered or notified to Ordnance Survey by customers, these will be referred to Royal Mail for possible improvement.

Positional quality indicator (PQI)

The importance of checking the PQI, to establish CPLC positional quality, cannot be overemphasised.

It indicates the positional accuracy of the Code-Point Open coordinates. There are seven PQI values for the positional quality of CPLCs. The order shown indicates the level of quality associated with the PQI; PQ10 is the most accurate and PQ90 the least. The PQI assigned to the CPLC will depend on the coordinates available in ADDRESS-POINT to generate the CPLC. If the ADDRESS-POINT PQI is PQ3, the best it can be, then the Code-Point Open PQI will be PQ10.

PQI	Description of source ADDRESS-POINT data
10	Within the building of the matched address closest to the postcode mean determined automatically by Ordnance Survey.
20	As above, but determined by visual inspection by NRS.
30	Approximate to within 50 m of true position (postcodes relating to developing sites may be within 100 m of true position).
40	The mean of the positions of addresses previously matched in ADDRESS-POINT but that have subsequently been deleted or recoded (very rarely used).
50	Estimated position based on surrounding postcode coordinates, usually to 100 m resolution, but 10 m in Scotland.
60	Postcode sector mean (direct copy from ADDRESS-POINT). See glossary for additional information.
90	No coordinates available.

Attributes

Attribute	Description
Postcode	Contains elements for postal area, district, sector and unit. See postcode in this chapter.
Positional quality	Indicates the source of the data indicator used and, hence, the quality of the coordinates provided for each record. It is determined by the best available data in ADDRESS-POINT.
Easting	Distance in metres east of National Grid origin.
Northing	Distance in metres north of National Grid origin.
Country code	Code used by ONS to identify the country in which the Code-Point Open georeference lies. See glossary .
NHS regional health authority code	English Pan Strategic Health Authority in which CPLC falls.
NHS health authority code	English Strategic Health Authority or Scottish Health Board in which CPLC falls.
Administrative county code	County in which CPLC falls.
Administrative district code	Unitary Authority, Metropolitan and Non- Metropolitan District, London Borough or Scottish Council Area in which CPLC falls.
Administrative ward code	Electoral Ward or Division in which CPLC falls.

Comparison of Code-Point Open and Code-Point attributes

Data element	Code-Point Open	Code-Point
Postcode unit	√	√
Eastings	√	√
Northings	√	√
Positional quality indicator	√	√
PO Box [®] indicator		√
Total number of delivery points		√
Delivery points		√
Domestic delivery points		√
Non-domestic delivery points		√

PO Box delivery points		√
Matched address premises		√
Unmatched delivery points		√
Country code	√	√
NHS regional health authority code	√	√
NHS health authority code	√	√
Administrative county code	√	√
Administrative district code	√	√
Administrative ward code	√	√
Postcode type	√	√

Administrative and health authority codes

Administrative and health authority codes allocation to postcode is by point in polygon comparison against Boundary-Line data.

For administrative/NHS codes, a look-up table in Gridlink is used.

Postcodes with a PQI of 90 or 60 are not allocated codes.

Lineage

Code-Point Open is derived from Gridlink data – ADDRESS-POINT, which was initially created from a comparison of the Royal Mail Postcode Address File (PAF[®]), OS MasterMap[®] Topography Layer and the ROADS database datasets from Ordnance Survey and administrative and national health area codes created by ONS and NRS, but allocated using Ordnance Survey Boundary-Line data and positioned with an Ordnance Survey NGref.

Positional accuracy

Each CPLC is coordinated on the National Grid, with eastings and northings quoted to a resolution of 1 metre. The accuracy of each postcode unit coordinate pair is defined by the PQI, which provides a quality statement of that Code-Point Open record.

Attribute accuracy

The representation of postcode attributes is checked as part of Royal Mail maintenance of PAF and by Ordnance Survey when coordination and quality assurance of ADDRESS-POINT is carried out during field survey activity.

Logical consistency

Logical consistency is a measure of the degree to which Code-Point Open data agrees with its specified structure. Data is monitored to ensure that attributes are present in the correct format and in valid combinations.

Completeness

Code-Point Open contains coordinates for all available postcode units supplied to Ordnance Survey from the Royal Mail PAF. Resources are directed towards continually improving attribute and positional accuracy. Deleted postcodes are not included. Errors and omissions that are identified by customers can be referred to Ordnance Survey for investigation and, where appropriate, onward notification to Royal Mail.

Chapter 4 Creating single-space postcodes

Centroids only

Outward and inward bound representation

The current specification represents the postcodes in a set format, which defines the postcodes as having an inward and outward postcode 'code'. Code-Point Open postcodes have 0, 1 or 2 spaces between the in and out code.

The table below identifies how postcodes are currently shown in the data.

Postcode structure	Number of spaces
AANNNA	0 spaces (represented as AANNNA) for example: PO143RW
ANN NAA	1 space (represented as ANN<>NAA) for example: CB1 1DG
AN NAA	2 spaces (represented as AN<><>NAA) for example: B1 5AP

Single-space postcodes

The Code-Point Open postcodes are currently represented as above; however, there may be a user requirement to represent each postcode in a uniformed single-space format.

The aim of this section is to offer some guidance on how to process the Code-Point Open data to generate postcodes with a single space.

The single-space instructions are applicable to both the postcode point and unit polygon products. Microsoft[®] Excel[®], Microsoft Access[®], MapInfo[®] and ESRI[®] GIS formats have been included to provide guidance when using CSV and other formats.

The underlying theory for all of the methods is principally the same, in that all current spaces are removed and then a single space added before the third character from the right.

CSV single-space postcodes using Microsoft Excel and Access

- Open the CSV file with Excel so the data is displayed in columns.

In a new blank column, click in the first cell of the new column (excluding the row column names).

- In the function line, enter the following function command, where A1 is the column containing the postcode:
=TRIM(LEFT(A1,LEN(A1)-3))&"<s>"&RIGHT(A1,3)

Where <s> indicates a single space.

This should now produce a column containing postcodes with a single space.

The same method can be employed in Access, using an update query rather than the function line. The functions listed above are the same for Access and Excel.

MID/MIF and TAB single-space postcodes using MapInfo

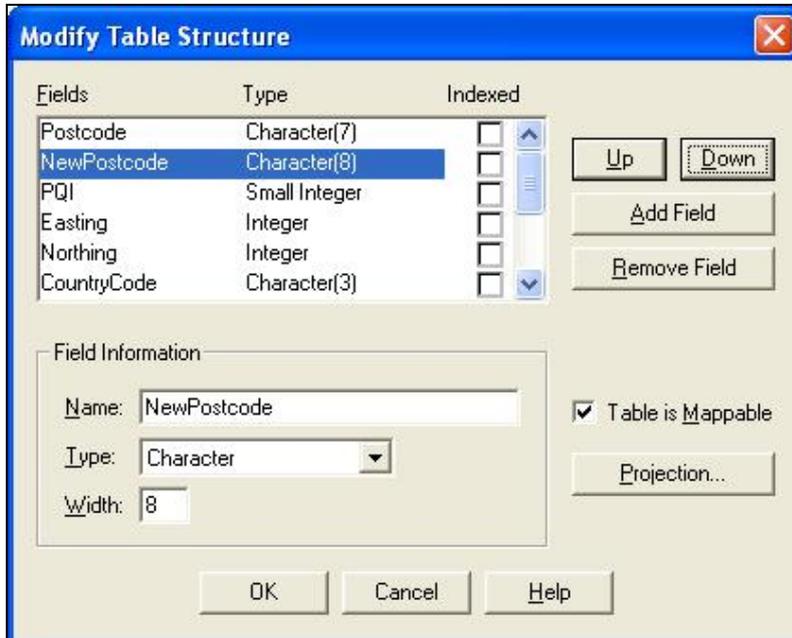
The process within MapInfo is the same, regardless of whether the original supply is in TAB or MID/MIF, as both are imported to MapInfo and opened as a .TAB file.

- First, open the Code-Point Open data in MapInfo and add a new column to hold the formatted postcode.

To add a column to the TAB file.

- Click on *Table, Maintenance, Table Structure*.

This opens the following *Modify Table Structure* dialogue box:



NOTE: if the Add Field/Remove Field buttons are missing, then it may be necessary to save a copy of the table and alter the copy.

- Click on *Add Field*.

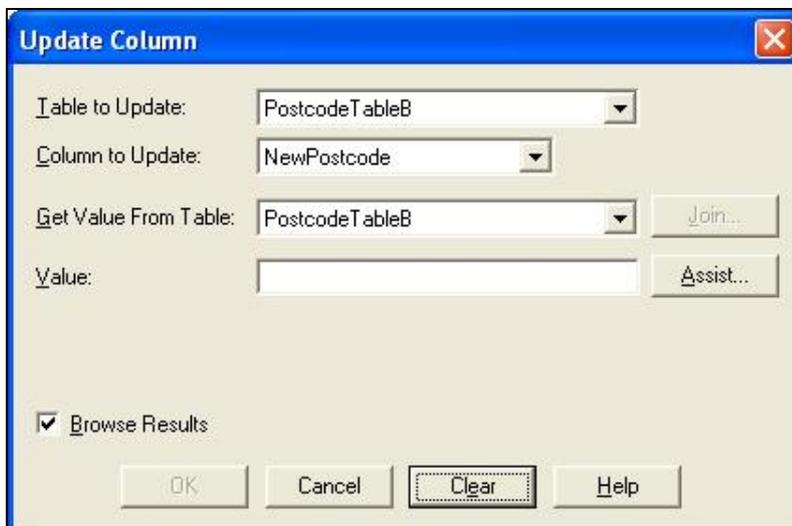
This adds a field to the end of the table.

- Name the new column 'NewPostcode' and give it a *Type* of 'Character' and a *Width* of '8'.
- Click the *OK* button to apply the changes.

The final stage is to update the new column.

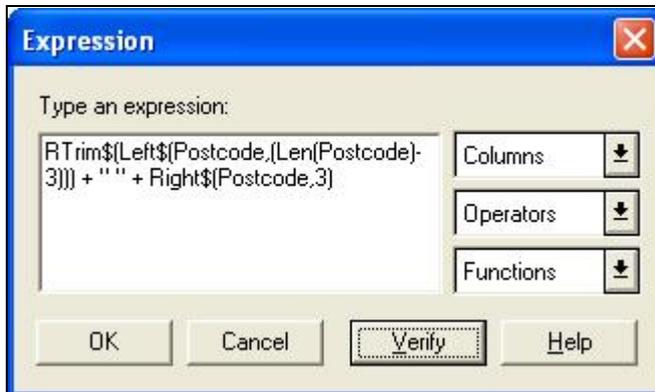
- Click *Table* and then the *Update column* tab.

This opens the following dialogue box:



- Ensure that the *Table to Update* field has the name of the table you wish to update as its value.
- From the *Column to Update* drop down menu select the previously added column 'NewPostcode' making sure the *Get Value from Table* is the same table as in the *Table to Update* field.
- Click the *Assist* button.

This opens the following *Expression* dialogue box:



- In the *Type an expression* box, key in the following function command:
RTrim\$(Left\$(Postcode,(Len(Postcode)-3))) + "" + Right\$(Postcode,3)
- Click the *OK* button to apply the update.

This will update your new column with a single-space postcode.

Shapefile single-space postcodes using ESRI ArcGIS®

These steps are based on the assumption that the data has already been imported into ArcGIS and that the user has the correct permissions to edit the Shapefile. It is advised to try this method on a copy of the original data, and not the only copy of the data, in case of error.

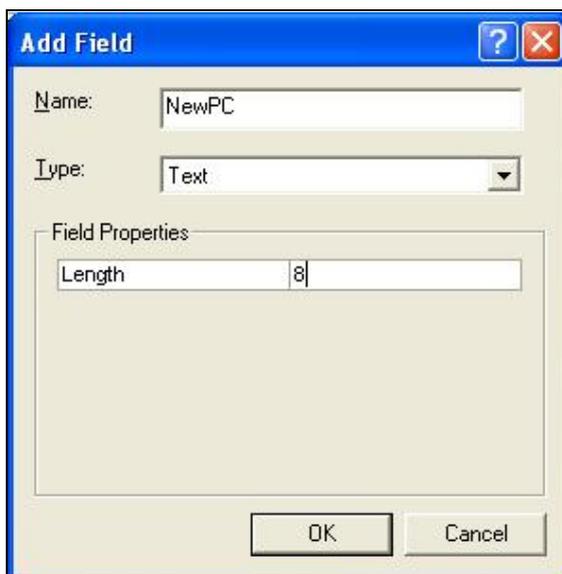
Once the Shapefile is open, the required new fields can be added.

- Right-click on the layer in the *Table of Contents* (down the left-hand side of the *map* window) and open the *Open Attribute Table*.

The first step is to add a new column to hold the newly formatted postcode.

- Click on the *Options* button then click on *Add Field*.

This opens the following dialogue box:



- Key in an appropriate name, for example, 'NewPC' in the *Name* box and change the *Type* box on the drop-down menu to 'text'; also change the *Field Properties Precision/Length* to '8'.

- Click *OK* and the field is added.

The final stage is to update the new column. In order to populate the fields, the table has to be made editable.

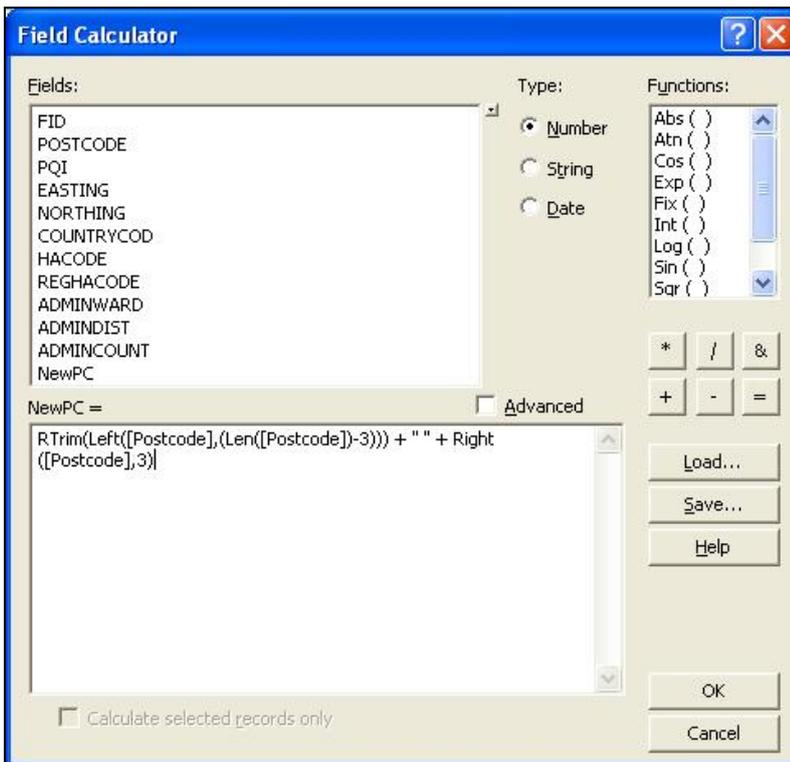
Return to the map window. Do not close the attribute table as it will be required later. Click on the *Editor* drop down selection = ▼.



If this toolbar is not already loaded then right-click on an empty part of the grey area on the map window and all the available toolbars will be listed. Simply click on the *Editor* tool bar and it will be loaded to the toolbar.

- Click the *Editor* drop down and select the first option, *Start Editing*.
- Once *Start Editing* has been selected, return to the attribute table.
- Right-click on the column name of the column added previously, for example, 'NewPC' and select *Field Calculator*.

This opens the following *Field Calculator* dialogue box:



- In the bottom dialog box, enter in the following function command:
RTrim(Left([Postcode],[Len([Postcode])-3])) + "<s>" + Right([Postcode],3)
- Click *OK* to update the column. This will update your new column with a single-space postcode.

Finally, go back to the map window, click on the *Editor* tool bar and select *Stop editing*. It will prompt to save the edits. Click *Yes*.

Chapter 5 Data measures

Ordnance Survey measures the data in its products in one or more of the ways set out in table 1 below.

Table 1: definitions of data measures

Data measure	Definition	Sub-measure	Definition
Completeness	Presence and absence of features against the specified data content*	Omission	Features representing objects that conform to the specified data content but are not present in the data
		Commission	Features representing objects that do not conform to the specified data content but are present in the data
Logical consistency	Degree of adherence to logical rules of data structure, attribution and relationships	Conceptual consistency	How closely the data follows the conceptual rules (or model)
		Domain consistency	How closely the data values in the dataset match the range of values in the dataset specification
		Format consistency	The physical structure (syntax): how closely the data stored and delivered fits the database schema and agreed supply formats
		Topological consistency	The explicit topological references between features (connectivity) – according to specification
Positional accuracy	Accuracy of the position of features	Absolute accuracy	How closely the coordinates of a point in the dataset agree with the coordinates of the same point on the ground (in the British National Grid reference system)
		Relative accuracy	Positional consistency of a data point or feature in relation to other local data points or features within the same or another reference dataset
		Geometric fidelity	The 'trueness' of features to the shapes and alignments of the objects they represent*
Temporal accuracy	Accuracy of temporal attributes and temporal relationships of features	Temporal consistency	How well ordered events are recorded in the dataset (life cycles)
		Temporal validity (currency)	Validity of data with respect to time: the amount of real-world change that has been incorporated in the dataset that is scheduled for capture under current specifications
Thematic accuracy (attribute accuracy)	Classification of features and their attributes	Classification correctness	How accurately the attributes within the dataset record the information about objects*

*When testing the data according to the dataset specification against the 'real world' or reference dataset.

Annexe A Metadata

ISO compliant metadata is available for the data and can be found on [Ordnance Survey's website](#).

Annexe B Product and service performance report form

Ordnance Survey welcomes feedback from its customers about Code-Point Open.

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:

Code-Point Open Product Manager, Ordnance Survey, Adanac Drive, SOUTHAMPTON, SO16 0AS.

If you wish to return it by fax, please dial +44 (0)8450 990494.

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.

Code-Point Open

Technical specification

Contents

Section	Page no
Introduction	20
Purpose of this specification and disclaimer	20
Copyright in this specification	20
Data copyright and other intellectual property rights	20
Chapter 1	Introducing Code-Point Open 21
Requirements to use Code-Point Open	21
What you need to use Code-Point Open	21
Supply definition	21
Update	21
File sizes	21
Code-Point Open data structure	21
Structure of Code-Point Open CD-ROM and download	22
Code-Point Open content	22
Formats	22
CSV	23
Chapter 2	Record structures for the transfer of Code-Point Open in CSV 24
CSV fields	24
Annexe A	Glossary 25

v1.7 – 11/2012

Introduction

Purpose of this specification and disclaimer

This is the technical specification (hereafter referred to as the specification) applicable to the Code-Point Open product (hereafter referred to as the product).

We may change the information in this specification at any time.

We do not accept responsibility for the content of any third-party websites referenced in, or accessed through, this guide or through the Ordnance Survey website.

Copyright in this specification

This specification is © Crown copyright 2011. All rights reserved.

You may copy or distribute any part of this specification to support the use of OS OpenData, including for your personal use, use in your organisation or business, or for use with or incorporation in your product or application.

Data copyright and other intellectual property rights

The Crown (or, where applicable, Ordnance Survey's suppliers) owns the intellectual property rights in the data contained in this product. You are free to use the product on the terms of the OS OpenData Licence, but must acknowledge the source of the data by including the following attribution statement: *Contains Ordnance Survey data © Crown copyright and database right 2011.*

In the case of Code-Point Open data, you should also use these attribution statements:

Contains Royal Mail data © Royal Mail copyright and database right 2011.

Contains National Statistics data © Crown copyright and database right 2011.

Chapter 1 Introducing Code-Point Open

Requirements to use Code-Point Open

What you need to use Code-Point Open

Code-Point Open is a data product and does not include software for analysis but can be used with a variety of programs. Code-Point Open can be loaded onto any desktop PC. Consult your geographical information system (GIS) vendor to establish actual system requirements.

Supply definition

Code-Point Open is only available as national cover of Great Britain and is supplied on CD-ROM or as a download.

Code-Point Open is available in comma-separated values (CSV) format.

Update

Code-Point Open is created using updates from Ordnance Survey field surveys and Gridlink[®] (a consortium made up of Royal Mail, Ordnance Survey, the Office of National Statistics (ONS), Land & Property Services[®] and National Records of Scotland (NRS) via ADDRESS-POINT and Boundary-Line.

Updates are supplied quarterly and provided as a complete resupply, but do not include deleted postcodes.

File sizes

Approximate file size for Great Britain in CSV is 153 Mb.

Code-Point Open data structure

The Code-Point Open CD-ROM and download contains two folders in the root directory: *doc* and *data*.

The *doc* folder contains the following files:

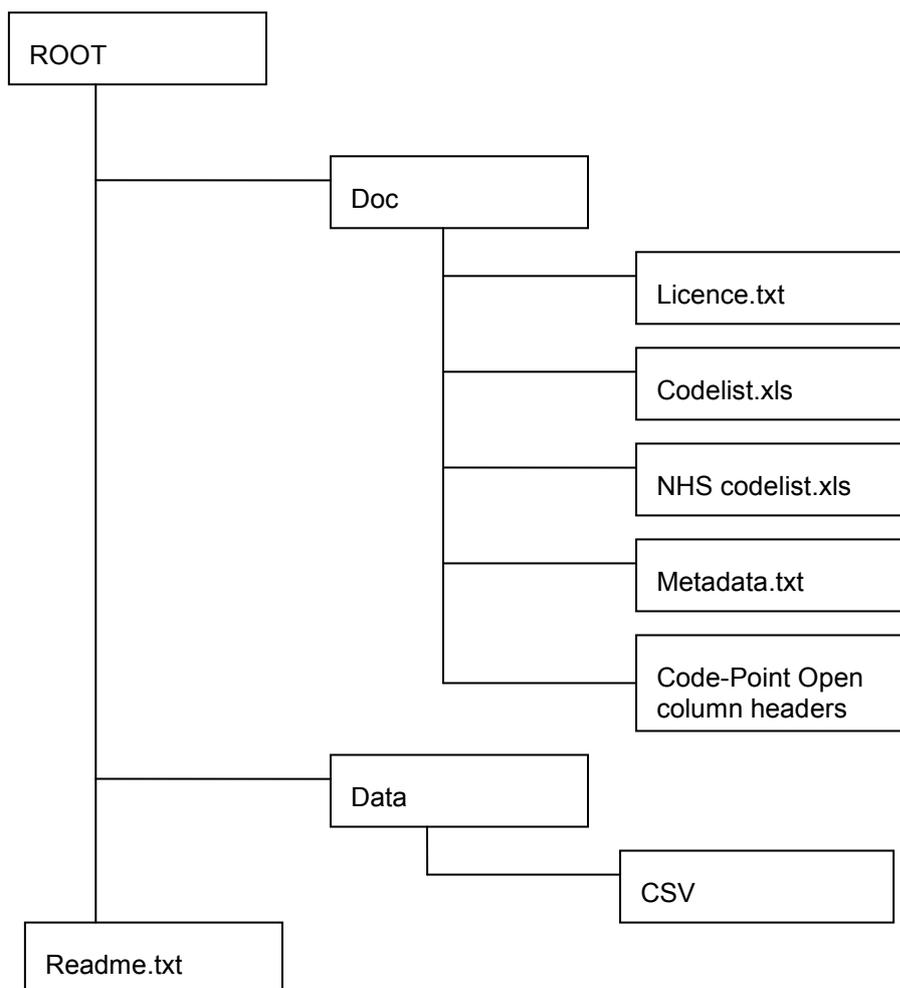
- LICENCE.TXT – important licence information
- CODELIST.XLS – lookup table of GSS codes
- NHS_CODELIST.XLS – lookup table of health GSS codes
- METADATA.TXT – number of postcode units in each postcode area
- Code-Point Open column headers - description of column headers

The *data* folder contains the following sub-folder:

- CSV – contains 120 postcode area files in CSV format.

A readme file sits outside of these two folders and contains information on the root structure of the data.

Structure of Code-Point Open CD-ROM and download



Code-Point Open content

Code-Point Open provides the following data:

- Postcode unit;
- Positional quality indicator;
- Easting
- Northing
- Country code;
- National Health Service health authority code;
- National Health Service regional health authority code;
- Administrative ward code;
- Administrative district code and;
- Administrative county code.

Formats

Code-Point Open is available in comma-separated values (CSV).

CSV

CSV is a method for delivering data. It is a common interchange format for spreadsheets and databases, and facilitates a simplistic use of Code-Point Open. Each field is either textual, for example, SO515RU, or numeric, for example, 21. Within CSV files, each field is separated from the next by a comma. If the field is textual, then the text is enclosed in double quotes, for example, 'SO515RU'.

This method of representation can also be referred to as a comma-delimited file (CDF).

For convenience, this is referred to as CSV throughout. The structure of Code-Point Open supplied in CSV is described in [chapter 2](#) of the technical specification.

Chapter 2 Record structures for the transfer of Code-Point Open in CSV

CSV fields

The CSV will contain the following fields separated by commas in the following order:

Mnemonic	Description	Format	Size	Description
PC	Postcode unit	A7	7	
	Field separator	A1	1	,
PQ	Positional quality indicator	I2	1	
	Field separator	A1	1	,
EA	Eastings	I6	*	
	Field separator	A1	1	,
NO	Northings	I7	*	
	Field separator	A1	1	,
CY	Country code	A9	9	
	Field separator	A1	1	,
RH	NHS regional health authority code	A9	9	
	Field separator	A1	1	,
LH	NHS health authority code	A9	9	
	Field separator	A1	1	,
CC	Administrative county code	A9	9	
	Field separator	A1	1	,
DC	Administrative district code	A9	9	
	Field separator	A1	1	,
WC	Administrative ward code	A9	9	
	Field separator	A1	1	,

Those fields containing text, that is, alphanumerics (A), will be enclosed by double quotes, which have not been included in the sizes listed above. I indicates and Integer value.

Fields with null data will appear as " " for text or 0 for a numeric.

Each record will be terminated with a carriage return character (ASCII 13) and a line feed character (ASCII 10).

Examples of a Code-Point Open CSV record:

```
EX1 1AE",10,,291960,92581,"E92000001","E19000002","E18000010","E10000008","E07000041","E05003498"
```

Annexe A Glossary

The purpose of this section is to provide a glossary of terms used in the definition of products, services, licensing and other terms and conditions for Code-Point Open.

addressed premise

A permanent or non-permanent building structure with an address being a potential delivery point for Royal Mail.

Examples of an addressed premise would be: a house, a flat within a block of flats, a caravan site, a bollard to which several houseboats may be moored, or an organisation occupying the whole of a building.

ADDRESS-POINT

An Ordnance Survey addressing product that relates Royal Mail [Postcode Address File](#) (PAF) addressed properties within Great Britain to the [National Grid](#).

CPLC (Code-Point Open location coordinate)

A [National Grid reference](#) for each [postcode unit](#). It is a two-dimensional coordinated point to a resolution of 1 metre. Coordinates are attributed from Gridlink using an accuracy hierarchy.

Country code

The code used by the Office of National Statistics to indicate the country in which the Code-Point Open georeference lies. This has replaced the PAF update date field.

Country	Code
England	E92000001
Scotland	S92000003
Wales	W92000004
N Ireland	N92000002

Comma-separated values (CSV)

The CSV file format is commonly used to exchange data between different applications, for example, Microsoft Excel and Access. Being text files, CSV files can also be viewed in proprietary text editing applications

delivery point

A Royal Mail-defined point to which mail is delivered. This may be a property (private address), organisation, mailbox or even, very rarely, the name of an individual. These categories are derived from the *Programmers' Guide* from Royal Mail. This is distinct from the addressed premise because there may be more than one organisation at an address.

Gridlink

Gridlink is the name given to a joined-up Government initiative involving Royal Mail, the Office for National Statistics, National Records of Scotland (NRS), Land & Property Services and Ordnance Survey. All these organisations are involved in the georeferencing of postcodes and the relating of postcodes to administrative and National Health Service areas and so on.

inward code or incode

See [postcode](#).

matched address

An address, resulting from a match between the OS MasterMap Topography Layer data and PAF, which has been allocated a coordinate position. The match may be a result of either manual or automatic matching, the latter encompassing both full and 'fuzzy logic' matching.

National Grid reference (NGref)

The National Grid provides a unique reference system that can be applied to all Ordnance Survey maps of Great Britain. The map of Great Britain is covered by 100 km by 100 km grid squares, with the origin lying to the west of the Isles of Scilly. When a National Grid reference is quoted, the easting (left to right direction) is always given before the northing (upwards direction).

A National Grid reference (to 1 metre) will identify the spatial position of the [CPLC](#).

non-geographic postcodes

Special non-geographic postcodes are allocated to single organisations who receive an exceptionally large amount of mail. These are included in Code-Point Open.

outward code or outcode

See [postcode](#).

PAF (Postcode Address File)

PAF now contains the postal addresses and postcodes of approximately 28 million delivery points in Great Britain.

Positional quality indicator (PQ)

The positional quality indicator is a flag used to indicate the positional accuracy of the coordinates allocated to each postcode record. There are seven PQI values for the positional quality of CPLCs

postal address

A postal address is a delivery point that is currently receiving mail. There may be many delivery points within an individual building structure as shown in OS MasterMap Topography Layer data.

postcode

An abbreviated form of address, made up of combinations of between five and seven alphanumeric characters. A postcode may cover between 1 and 100 addresses. The average number of addresses per postcode is 15.

There are two main components of a postcode:

- The outward code (also called outcode). The first two to four characters of the postcode, constituting the postcode area and the postcode district. It is the part of the postcode that enables mail to be sent from the accepting office to the correct area for delivery.
- The inward code (also called incode). The last three characters of the postcode, constituting the postcode sector and the postcode unit. It is used to sort mail at the local delivery office.

For example:

Outward		Inward	
NW	6	4	DP
			Unit
		Sector	
	District		
Area			

postcode area

An area given a unique alphabetic coding by Royal Mail to facilitate the delivering of mail. The area is identified by one or two alpha characters at the start of the full postcode, the letters being derived from a town, city or district falling within the postcode area. There are, at present, 120 postcode areas in Great Britain, for example, SO for Southampton, MK for Milton Keynes, B for Birmingham or W for London West. The postcode area code constitutes the first part of the outward code.

postcode district

A sub-area of the postcode area, specified by the character sub-string within the first half of a full postcode, which may be numeric, alphabetic or alphanumeric; for example, 42 from MK42 6GH or 1A from W1A 4WW. There are approximately 2 986 postcode districts in Great Britain.

NOTE: there are certain non-geographic districts. In these instances, a district code is allocated to cover all large users in the postcode area.

postcode sector

A sub-area of a postcode district, whose area is identified by the number third from the end of a full postcode. There are approximately 11 200 postcode sectors in Great Britain. An example of a postcode sector code is 3, from GU12 3DH.

postcode unit

A sub-area of a **postcode sector**, indicated by the two letters of the **inward postcode**, which identifies one or more **small-user postcode** delivery points or an individual **large-user postcode**. There are approximately 1.8 million postcode units in the UK.

Postzon

A file marketed by Royal Mail that allocates a [National Grid reference](#) to each postcode unit. This coordinate is derived from a 100 metre square that contains the first of the range of addresses that form the postcode unit.