

## **Preface**

This user guide contains all the information you need to make effective use of Code-Point® and is designed to help you understand the information contained in the data, as well as providing detailed technical information and the data format specification.

This user guide has been checked and validated before issue and every endeavour made to ensure that the contents are accurate. If you find an error, omission, or otherwise wish to make a suggestion as to how this user guide can be improved, please contact us at the address shown under Contact details or use the Product performance report form at appendix B.

### **Contact details**

The Customer Contact Centre will be pleased to deal with your enquiries:

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## **Product performance**

If you have any problems with or identify any errors in the Code-Point data, please complete the Product performance report form at appendix B.

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Ordnance Survey makes every effort to ensure that data supplied are free from errors and omissions. We will remedy, as soon as reasonably practicable, errors and omissions that the customer notifies us of in writing. It is the customer's responsibility to ensure that data ordered is suitable for the intended purpose. We will not be liable to the customer or any other party for any loss, damage, inconvenience or expense resulting from the use of, or reliance upon, the data.

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You are advised to copy the supplied data to a back-up medium.

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To reject the product you must contact us within 28 days of delivery and must confirm your instructions in writing. If you do not, we will assume that you are satisfied with them. You cannot reject the products after this time. If you are a 'consumer', as defined in the *Consumer Transactions (Restriction on Statements) Order 1976*, this paragraph does not affect your statutory rights.

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## **Chapter 1** Introduction

Code-Point is an Ordnance Survey data product that provides a National Grid coordinate for a point within each unit postcode in Great Britain.

### **Code-Point features**

With each coordinated point, Code-Point products provide:

- information about the number and type of postal delivery points in the postcode;
- a positional quality indicator (PQI), which indicates the quality of the data underlying the Code-Point location coordinate (CPLC);
- the country indicator (either England, Scotland, Wales or Northern Ireland);
- the postcode type;
- the National Health Service region and area codes; and
- the local government county, district and ward codes.

## **Applications of Code-Point**

Code-Point provides a comprehensive base of geographically-located data on which a wide range of applications can be built. Typical applications include:

- market analysis;
- risk analysis for insurance, financial and environmental services;
- site location analysis for retailing;
- lifestyle analysis; and
- approximate site location for route planning.





## What you need to use Code-Point

Code-Point is a data product and does not include software for analysis, but can be used with a variety of programs. Code-Point can be loaded onto any desktop PC. To exploit fully the potential of Code-Point, the recommended requirements are at least a 486 PC or equivalent. Consult your geographical information system (GIS) vendor to establish actual system requirements.

## **Supply definition**

Code-Point is only available as national cover of Great Britain and Northern Ireland and is supplied on CD-ROM containing CDF and NTF data.

## **Update**

Code-Point is recreated quarterly using updates from Ordnance Survey field surveys and Gridlink® (a consortium made up of Royal Mail® (RM), Ordnance Survey, the Office of National Statistics (ONS), Ordnance Survey of Northern Ireland (OSNI) and the General Register Office for Scotland (GROS)), via ADDRESS-POINT® and Boundary-Line™.

Updates are supplied annually – depending upon the terms of your contract – and are also available on request. Updates are provided as a complete resupply, but do not include deleted postcodes.

### **Code-Point content**

Code-Point provides the following data:

- unit postcode;
- PQI;
- PO box indicator;
- total number of delivery points within unit postcode;
- number of delivery points with the same PQI as the unit postcode itself;
- number of domestic delivery points;
- number of non-domestic delivery points;
- number of delivery points which are PO boxes;
- number of premises with a matched address;
- number of unmatched delivery points;
- National Grid CPLC;
- country code;
- National Health Service regional health authority code;
- National Health Service health authority code;
- administrative county code;
- administrative district code;
- administrative ward code; and
- postcode type.





### **Formats**

Code-Point is available in:

- BS 7567 (NTF v2.0) Level 2; and
- Comma Delimited File (CDF).

### NTF

NTF is the standard transfer format for most of Ordnance Survey's digital map data products. Code-Point is supplied in NTF v2.0 Level 2, which has been formally recognised as a British Standard – BS 7567.

For convenience, BS 7567 (NTF v2.0) Level 2 is referred to as NTF throughout this user guide. The structure of Code-Point supplied in NTF is described in chapter 5 and chapter 6.

## Comma Delimited File (CDF)

CDF is a standard method for delivering data. It is a common interchange format for spreadsheets and databases, and facilitates simplistic use of Code-Point.

For convenience, this is referred to as CDF throughout this user guide. The structure of Code-Point supplied in CDF is described in chapter 7 and chapter 8.

# **Chapter 2** Overview of Code-Point

### **Data overview**

Code-Point provides National Grid coordinates for each unit postcode in Great Britain. The data source for Code-Point is Gridlink, which consists of ADDRESS-POINT, Boundary-Line and Land-Line® data; Royal Mail's Postcode Address File (PAF®) and Postzon® products; and National Health Service (NHS) and administrative area codes provided by ONS.

ADDRESS-POINT contains postal address data for approximately 26 million postal delivery points. These delivery points may be premises that are shown in Land-Line data such as buildings, or they might be features that do not form part of the Land-Line specification such as PO boxes, caravan parks, buildings under railway arches, temporary buildings and houseboats. All unit postcodes in PAF, which have valid and current postal delivery points, will be in Code-Point.

## **Basic principles**

- Each unit postcode will be allocated a National Grid reference (NGref) of a point that falls within the notional extent of the unit postcode there may be a small number of instances where coordinates cannot be allocated.
- Multiple postcodes in a single block of flats or offices will share one NGref these may be either large users or small users, or both.
- Administrative area codes are allocated using the Boundary-Line polygon that the CPLC falls within; currency is
  that of the latest available Boundary-Line data. Where addresses in a postcode fall in two or more administrative
  areas, only the codes for the area in which the CPLC falls are given.
- NHS codes are allocated using the premise that areas are always supersets of administrative areas.





## **Application overview**

### **Uses of Code-Point**

Code-Point forms a nationally consistent postcode reference and is a standard link between:

- Databases and GIS.
- Two or more databases.

#### Retail

- Market analysis and profiling.
- Sales analysis by store.
- Competitor analysis.
- Market analysis and profiling.
- Store location.
- Targeting promotions.

#### Insurance

- Market analysis and profiling.
- Competitor analysis.
- Geological and flood risk analysis.
- Personal and household risk assessment.
- Sales territory management.

#### Health

- Targeting of services to population needs.
- Plan resource allocation.
- Epidemiology.
- Analysis of What if ...? scenarios.

#### **Utilities**

- Assessment of markets for targeting.
- Consumption analysis.
- Pressure zone analysis.
- Transport.
- Location finding.
- Route planning.

#### Government

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

### **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? Does this relate to air quality?





#### **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

JS Insurance has been asked to quote structural insurance for a potential customer within the Southampton (SO) area. SO has been labelled, geographically, as a clay area and therefore insurance companies charge higher premiums because of the higher incidence of subsidence.

With the use of Code-Point, *JS Insurance* can closely highlight blocks of houses within SO on clay. If a particular house does not fall within this category, *JS Insurance* can, with no risk, quote a premium which is lower than the market average.

## **Chapter 3** Code-Point explained

### Reference

The full postcode itself forms a unique reference.

### **Postcode**

Postcodes are an alphanumeric abbreviated form of address. A postcode will uniquely identify an average of 15 addresses. In some cases, where a customer receives a substantial amount of mail, a postcode will apply to only one address (a large user postcode). The maximum number of addresses in a postcode is 100.

The postcode is held in Code-Point as a seven-character field. Although, when used in an address, the incode should be separated from the outcode by a single space, within Code-Point 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		Example	Example as held in	
Outcode	Incode	postcode	Code-Point	
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	W1A 4WW	
AANA	NAA	EC1A 1HQ	EC1A1HQ	

Please refer to the glossary for a further description of postcode.

#### Postcode example:

Area District Sector Unit KY 12 8 UP





### **Position**

## Code-Point location coordinate (CPLC)

Code-Point provides an NGref, to a resolution of 1 metre, for each unit postcode in Great Britain and Northern Ireland, and is known as the CPLC. A CPLC is normally allocated to a point that falls within the extent of the unit postcode. 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 unit postcodes awaiting a surveyed position, or which relate to addresses that will not have a surveyed position on Land-Line data.

Where several unit postcodes apply to one surveyed position, for example, a block of flats or offices, there is an identical CPLC for each. There may be occurrences where the position of the CPLC is distorted by the erroneous allocation by Royal Mail of a postcode to an address outside the contiguous geographical extent of that postcode. These distortions may also affect the allocation of NHS and administrative area codes, and/or the size or extent of a postcode polygon.

Such occurrences, when discovered or notified to Ordnance Survey by customers, 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 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. Those derived from addresses with a PQ3 in ADDRESS-POINT will therefore be assigned a PQ10 in Code-Point.

#### PQI Description of source ADDRESS-POINT data

- Within the building of the matched address closest to the postcode mean determined automatically by Ordnance Survey or OSNI (BT postcode area only).
- 20 As above, but determined to visual inspection by GROS.
- 30 Approximate to within 50 m of true position (postcodes relating to developing sites may be within 100 m true position).
- The mean of the positions of addresses previously matched in ADDRESS-POINT but which 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) mainly PO boxes. 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 ADDRESS-POINT 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.
PO box indicator	Denotes if the postcode is used for a PO box.
Total delivery points	The total number of both matched and unmatched delivery points in the postcode.





Attribute	Description
Delivery points used to the CPLC where the PQI value is 10 or 20	Number of matched addresses in the postcode unit of the same positional quality in create ADDRESS-POINT as the PQI for that postcode in Code-Point, provided that the Code-Point record has a PQI value of 10 or 20.
Domestic delivery points	Number of non-PO box delivery points that have no PAF organisation name.
Non-domestic delivery	Number of non-PO box delivery points that have a PAF organisation name.
PO box domestic delivery points	Number of PO box delivery points.
Matched addressed premises	Number of PQ3 ADDRESS-POINT delivery points in buildings or building sub-divisions, after exclusion of duplicated coordinate pairs.
Unmatched delivery points	Number awaiting improvement to PQ3 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 georeference lies. See glossary.
NHS regional health authority code	Region in which CPLC falls.
NHS health authority code	Area in which CPLC falls.
Administrative county code	e County in which CPLC falls.
Administrative district code	e District in which CPLC falls.
Administrative ward code	Ward in which CPLC falls.
Postcode type	Indicates whether the user is large, L, or small, S. Large postcode type users receive more than 25 items in rural areas, 50 in towns or 100 in large towns or cities

## Administrative and health authority codes

Administrative and health authority codes are those used by ONS. Allocation of codes to postcode is by point-in-polygon comparison against Boundary-Line data.

In the case of unitary authorities, 00 is given for administrative county; the authority code appears as the district code.

Where a district or unitary authority is divided into electoral districts, the code appears as the ward code. Postcodes with a PQI of 90 or 60 are not allocated codes.





## **Chapter 4 Quality statements**

Each Code-Point record contains an individual guality statement (the PQI), which is explained in chapter 3.

#### Lineage – where does the data come from?

Code-Point is derived from Gridlink data – ADDRESS-POINT, which was initially created from a comparison of the Royal Mail PAF with Land-Line and OSCAR® datasets from Ordnance Survey and administrative and national health area codes used by ONS, but allocated using Boundary-Line data.

#### Currency - how up to date is the data?

Currency is a measure of the real-world change included in Code-Point. Monthly postcode updates from the Royal Mail Postzon and PAF, together with improvements derived from Ordnance Survey field activity, are included in each version of Code-Point.

#### Positional accuracy – is it in the right place?

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

#### Attribute accuracy - are the attribute values correct?

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 – is the data structure correct?

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

#### Completeness – is it all there?

Code-Point contains coordinates for all available unit postcodes 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 which are identified by customers can be referred to Ordnance Survey for investigation and, where appropriate, onward notification to Royal Mail.





## **Chapter 5** NTF explained

### An overview of the data in NTF

### Introduction

This chapter gives an outline of the data structure of Code-Point in NTF. It should be read in conjunction with chapter 6.

There are certain conventions used in the record examples, which are:

- [] Square brackets are placed around record names, for example, [VOLHDREC].
- { } A pair of braces denote field names, for example, {REC\_DESC} is the record descriptor field.
- [] 21 A two-digit number following square brackets denotes the record descriptor, which uniquely identifies the record name between the brackets.
- <S> This is the space character (ASCII code 32).
- <3S> This denotes three successive space characters.
- % The percentage character (ASCII code 37).

### Record size

NTF data is written to the supply media in variable length records, with a maximum physical record length of 80 characters, which includes {CONT\_MARK} continuation mark and {EOR} record terminator.

## Continuation mark {CONT\_MARK}

Continuation records are used where the maximum physical record length of 80 characters does not permit a logical record to be transferred wholly within one physical record. The presence of a continuation record is indicated by the value of the continuation mark {CONT\_MARK} that immediately precedes the record terminator {EOR}. The value of {CONT\_MARK} is 1 if there is a continuation record present and 0 if there is not.





## Record terminator {EOR}

The last character of each physical record is the end of record terminator, which is the percent character (%) (ASCII 37).

### Transfer set

A transfer set normally equates to a single file.

### Transfer set structure

### Volume records

Each transfer set starts with a compulsory Volume Header Record [VOLHDREC] and terminates with a compulsory Volume Terminator Record [VOLTERM].

### Database records

Database records transfer information common to all data and their presentation in the subsequent section(s). An NTF transfer set will comprise one database. The database commences with a Database Header Record [DBHREC], which sets up the database. It will be followed by a number of Attribute Description Records [ATTDESC] and Feature Classification Records [FEATCLASS].

#### **Database Header Record [DBHREC]**

This mandatory record indicates the commencement of a database and gives details of:

- the database name;
- NTF release date;
- the supply option; and
- creation date that applies to the whole transfer set.

#### **Attribute Description Record [ATTDESC]**

These records list and give descriptions of the attributes that can be applied to the features within the transfer set.

#### Feature Classification Record [FEATCLASS]

These records list and give descriptions of the feature codes that can be present within the transfer set.

### Section records

The section records contain the Code-Point data within the postcode area being transferred by that section. It starts with the Section Header Record [SECHREC] and is followed by a number of Section Data Records that contain data on all the unit postcodes within the section. In Code-Point these data records consist of a sequence of three logical records, which is repeated for each unit postcode within the section.

#### Section Header Record [SECHREC]

This mandatory record starts a section. It contains information and parameters essential for understanding, interpreting and processing some of the fields within the data. It establishes the unit of measure for X and Y coordinates, origins and other constants.

#### Point Record [POINTREC]

This record identifies the start of the data for a single unit postcode and contains a feature serial number that is unique within any one section.

#### **Geometry Record [GEOMETRY1]**

This record contains the coordinate position of the unit postcode identified in the previous point record. All coordinate values within Code-Point are given with a precision of one metre.

#### **Attribute Record [ATTREC]**

The Attribute Record gives the attributes or details of the unit postcode, for example, the postcode itself, positional quality indicator and so on. This logical record may have one or more continuation records to transfer all the attribute information.





# Supply of data on media

### Formatted media

Data requested on logically formatted media such as CD-ROM, as defined by current Ordnance Survey product specifications, will be written directly to the output device. The data files will be written to the medium sequentially.

See also chapter 6.

# **Chapter 6** Record structures for the transfer of Code-Point in NTF

## **NTF** record list

This list comprises the valid record types used in the Code-Point NTF transfer set.

Descriptor	Description	Record name
01	Volume Header Record – defines the donor and data type.	[VOLHDREC]
02	Database Header Record – transfers data about the database.	[DBHREC]
40	Attribute Description Record – defines attribute descriptions and their fields.	[ATTDESC]
05	Feature Classification Record – defines data classifications.	[FEATCLASS]
07	Section Header Record – coordinate and structure types, unit scale, factors, and so on.	[SECHREC]
15	Point Record – identifies the definition of a unit postcode.	[POINTREC]
21	Geometry Record – defines the two-dimensional geometry for a unit postcode.	[GEOMETRY1]
14	Attribute Record – defines the attributes or details of a unit postcode.	[ATTREC]
99	Volume Terminator Record – defines the end of the transfer set.	[VOLTERM]

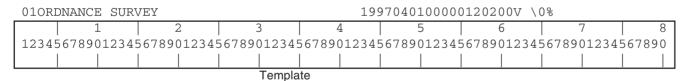




# **Volume Header Record [VOLHDREC] 01**

Field	Position	Format	Value example	Description
REC_DESC	01:02	A2	01	Record type identifier
DONOR	03:22	A20	ORDNANCE SURVEY<5S>	
RECIPIENT	23:42	A20	<20S>	Not used
TRANDATE	43:50	D8	19970401	Date of processing CCYYMMDD
SERIAL	51:54	14	0000	Customer sequence number
VOLNUM	55:56	12	01	Volume number (always 01)
NTFLEVEL	57:57	l1	2	NTF Level 2
NTFVER	58:61	R4,2	0200	NTF Version 2.00
NTFOR	62:62	A1	V	Variable length records
EOR	63:63	A1	%	Sets {EOR} to % on formatted media
DIVIDER	64:64	A1	\	Divider used to terminate variable length text fields
CONT_MARK	65:65	l1	0	No continuation record
EOR	66:66	A1	%	Record terminator

### Record example:



## **Database Header Record [DBHREC] 02**

Field	Position	Format	Value example	Description
REC_DESC	01:02	A2	02	Record type identifier
DBNAME	03:22	A20	CODE_POINT_2002.1.0 <s></s>	Database name - Code-Point dataset version
DDNAME	23:42	A20	DEFAULT_02.00<7S>	Standard NTF data dictionary name
DDDATE	43:50	D8	19920515	Date of standard data dictionary
DDBASE	51:70	A20	<20S>	Not used
DDBDATE	71:78	D8	0000000	Not used
CONT_MARK	79:79	A1	1	Continuation record follows
EOR	80:80	A1	%	Record terminator

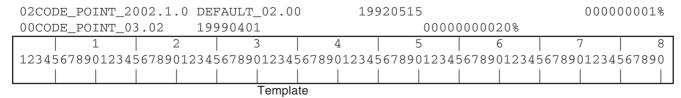
#### Continuation of Database Header Record

REC_DESC	01:02	A2	00	Continuation record identifier
FCNAME	03:22	A20	CODE_POINT_03.02<4S>	Code-Point specification version 2.02 (see note)
FCDATE	23:30	D8	19990401	Creation date of dataset
DQNAME	31:50	A20	<20S>	Not used
DQDATE	51:58	D8	0000000	Not used
DATA_MODEL	59:60	12	02	Data model type – spaghetti
CONT_MARK	61:61	A1	0	No continuation record
EOR	62:62	A1	%	Record terminator

Notes: The Code-Point specification version number gives the major version before the decimal point (2 in the above example) and after it the supply option (2 in the example).

CODE\_POINT\_02.02 = Code-Point product

#### Record example:







# **Attribute Description Record [ATTDESC] 40**

Field	Position	Format	Value example	Description
REC_DESC	01:02	A2	40	Record type identifier
VAL_TYPE	03:04	A2	PR	Attribute mnemonic, for example, PO box indicator
FWIDTH	05:07	A3	001 or <3S>	Fixed width of attribute or three spaces if variable width
FINTER	08:12	A5	A1<3S>	Interpretation of field (A* if variable width)
ATT_NAME	13:*	A*	PO box indicator	Name given to attribute
DIVIDER	*.*	A1	\	
CONT_MARK	*.*	A1	0	No continuation record
EOR	*.*	A1	%	Record terminator

Notes: An attribute description will be needed to describe all attributes used in Code-Point data. All the attributes that may appear within the data are given in the record examples below.

#### Record examples:

```
40PC007A7
            Unit postcode\0%
            Positional quality indicator \0%
40P0001I1
            PO box indicator\0%
40PR001A1
40TP003I3
            Total number of delivery points\0%
            Delivery points with same PQI Indicator as unit itself\0%
40D0003I3
            Domestic delivery points\0%
40RP003I3
            Non-domestic delivery points\0%
40BP003I3
            PO box delivery points\0%
40PD003I3
40MP003I3
            Matched address premises\0%
            Unmatched delivery points\0%
40UM003I3
            Country code\0%
40CY003I3
            NHS regional health authority code\0%
40RH003A3
            NHS health authority code\0%
40LH003A3
40CC002A2
            Administrative county code\0%
            Administrative district code\0%
40DC002A2
            Administrative ward code\0%
40WC002A2
40LS001A1
            Postcode type\0%
12345678901234567890123456789012345678901234567890123456789012345678901234567890
                              Template
```



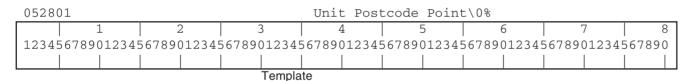


# **Feature Classification Record [FEATCLASS] 05**

Field	Position	Format	Value example	Description
REC_DESC	01:02	A2	05	Record descriptor
FEAT_CODE	03:06	14	2801	Feature code
CODE_COM	07:16	A10	<10S>	Not used
STCLASS	17:36	A20	<20S>	Not used
FEATDES	37:*	A*	Unit Postcode Point	Textual description of feature classification
DIVIDER	*.*	A1	\	Divider used to terminate variable length fields
CONT_MARK	*.*	l1	0	No continuation record
EOR	*.*	A1	%	Record terminator

<sup>\* =</sup> variable integer.

### Record example:



# **Section Header Record [SECHREC] 07**

Field	Position	Format	Value example	Description	
REC_DESC	01:02	A2	07	Record type identifier	
SECT_REF	03:12	A10	SO<8S>	Postcode area covered by dataset	
COORD_TYPE	13:13	I1	2	Defines rectangular coordinates	
STRUC_TYP	14:14	I1	1	Defines vector data	
XYLEN	15:19	15	00007	Defines {X_COORD}, {Y_COORD} as seven-digit fields	
XY_UNIT	20:20	I1	2	Defines X and Y units as metres	
XY_MULT	21:30	R10,3	000001000	Multiply X and Y coordinates by 1.000	
ZLEN	31:35	15	00006	Defines Z coordinates as six-digit fields	
Z_UNIT	36:36	I1	2	Defines Z units as metres	
Z_MULT	37:46	R10,3	000001000	Multiply Z units by 1.000	
X_ORIG	47:56	I10	000000000	Origin of National Grid, zero	
Y_ORIG	57:66	I10	000000000	Origin of National Grid, zero	
Z_DATUM	67:76	I10	000000000	Not used	
CONT_MARK	77:77	A1	1	Continuation record follows	
EOR	78:78	A1	%	Record terminator	

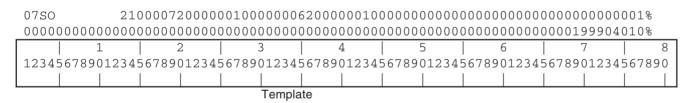




#### Continuation of Section Header Record

Field	Position	Format	Value example	Description
REC_DESC	01:02	A2	00	Continuation record identifier
XMIN	03:12	l10	000000000	Not used
YMIN	13:22	I10	000000000	Not used
XMAX	23:32	l10	000000000	Not used
YMAX	33:42	l10	000000000	Not used
XY_ACC	43:47	R5,2	00000	Not used
Z_ACC	48:52	R5,2	00000	Not used
SURV_DATE	53:60	D8	0000000	Not used
LAST_AMND	61:68	D8	0000000	Not used
COPYRIGHT	69:76	D8	19990401	Effective copyright date
CONT_MARK	77:77	A1	0	No continuation record
EOR	78:78	A1	%	Record terminator

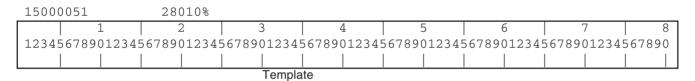
### Record example:



## Point Record [POINTREC] 15

Field	Position	Format	Value example	Description
REC_DESC	01:02	A2	15	Record type identifier
POINT_ID	03:08	16	000051	Feature serial number (range: 000001-999999)
VAL_TYPE	09:10	A2	<2S>	Not used
VALUE	11:16	A6	<6S>	Not used
FEAT_CODE	17:20	A4	2801	Point feature code
CONT_MARK	21:21	A1	0	No continuation record
EOR	22:22	A1	%	Record terminator

## Record example:







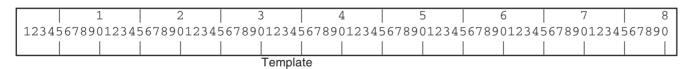
## **Geometry Record [GEOMETRY1] 21**

Field	Position	Format	Value example	Description
REC_DESC	01:02	A2	21	Record type identifier
GEOM_ID	03:08	16	000000	Not used
GTYPE	09:09	Al	1	Defines point geometry
NUM_COORD	10:13	14	0001	Number of coordinate pairs
IX_COORD	14:20	17	0272530	Easting
IY_COORD	21:27	17	0196956	Northing
IQPLAN	28:28	A1	<s></s>	Not used
CONT_MARK	29:29	A1	0	No continuation record or
			1	continuation record follows
EOR	30:30	A1	%	Record terminator

Postcodes which have no coordinated position will be given zero coordinates ('000000000000') and the positional quality indicator in the accompanying Attribute Record will be set to '0'.

## Record examples:

210000001000102725300196956 0%



## **Attribute Record [ATTREC] 14**

Field	Position	Format	Value example	Description
REC_DESC	01:02	A2	14	Record type identifier
ATT_ID	03:08	16	000000	Not used
IVAL_TYPE	09:10	A2	PC	Attribute mnemonic
IVALUE	11:*		SO515RU	Attribute value
CONT_MARK	*.*	A1	0	No continuation record or
			1	continuation record follows
EOR	*.*	A1	%	Record terminator

The pair of fields {VAL\_TYPE} and {VALUE} will repeat to specify all the attributes required. It may be necessary to utilise a continuation record to specify all attributes.

The Attribute Record will contain all or some of the following fields:

Attribute		Fixed or	
mnemonic	Description	variable	Size
PC	Unit postcode	F	A7
PQ	Positional quality indicator	F	l1
PR	PO box indicator	F	A1
TP	Total number of delivery points	F	13
DQ	Delivery points – used to create the CPLC where PQI value is 10 or 20	F	13
RP	Domestic delivery points	F	13
BP	Non-domestic delivery points	F	13
PD	PO box delivery points	F	13
MP	Matched address premises	F	13
UM	Unmatched delivery points	F	13
CY	Country code	F	13
RH	NHS regional health authority code	F	А3
LH	NHS health authority code	F	A3
CC	Administrative county code	F	A2
DC	Administrative district code	F	A2
WC	Administrative ward code	F	A2
LS	Postcode type	F	A1





Attributes with null data will be omitted from this record.

Each of the attribute mnemonics will be defined in an Attribute Description Record [ATTDESC] 40 at the start of the transfer set.

## Record example:

14000000PCSO515RUPQ3PRNTP017DQ017RP017BP000PD000MP017UM000RV19990215RHY06LHQD31%

	00002								
ſ		1	2	3	4	5	6	7	8
1	123456789012345678901234567890123456789012345678901234567890123456789012345678901								
	Townslate								

Template

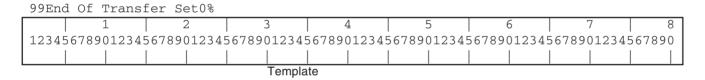
## **Volume Terminator Record [VOLTERM] 99**

Field	Position	Format	Value example	Description
REC_DESC	01:02	A2	99	Record type identifier
FREE_TEXT	03: *	A*	*	Message (see note below)
CONT_VOL	*.*	I1	0	No continuation volume follows
EOR	*.*	A1	%	Record terminator

The FREE\_TEXT field will comprise the message:

End Of Transfer Set

Record example:







## **Chapter 7** Comma Delimited Files (CDF) explained

## An overview of the data in CDF format

CDF is a de facto standard method for delivering data. This is provided to suit customers requiring a simple business use. CDF can be used in a word processing package or presented as a spreadsheet. Code-Point information in CDF is held within individual fields. Each field is either textual, for example, SO515RU, or numeric, for example, 21. Within CDF 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 Comma Separated Value or Comma Separated Variable (CSV). All coordinate values within Code-Point are given with a precision of one metre.

See also chapter 8.





# **Chapter 8** Record structures for the transfer of Code-Point in CDF

## **CDF** fields

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

Mnemonic	Description	Format	Size	Description
PC	Unit postcode	A7	7	•
	Field separator	A1	1	,
PQ	Positional quality indicator	I1	1	
	Field separator	A1	1	,
PR	PO box indicator	A1	1	
	Field separator	A1	1	,
TP	Total number of delivery points	13	*	
	Field separator	A1	1	,
DQ	Delivery points – used to create the CPLC where the PQI value is 10 or 20	13	*	
	Field separator	A1	1	,
RP	Domestic delivery points	13	*	,
	Field separator	A1	1	,
BP	Non-domestic delivery points	13	*	
	Field separator	A1	1	,
PD	PO box delivery points	13	*	
	Field separator	A1	1	,
MP	Matched address premises	13	*	
	Field separator	A1	1	,
UM	Unmatched delivery points	13	*	
	Field separator	A1	1	,
EA	Eastings	17	*	
	Field separator	A1	1	,
NO	Northings	17	*	
	Field separator	A1	1	,
CY	Country code	13	3	
	Field separator	A1	1	,





Mnemonic	Description	Format	Size	Description
RH	NHS regional health authority code	A3	3	
	Field separator	A1	1	,
LH	NHS health authority code	A3	3	
	Field separator	A1	1	,
CC	Administrative county code	A2	2	
	Field separator	A1	1	,
DC	Administrative district code	A2	2	
	Field separator	A1	1	,
WC	Administrative ward code	A2	2	
	Field separator	A1	1	,
LS	Postcode type	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.

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 CDF record:**

"SO515RU",10,"N",17,17,17,0,0,17,0,437015,120914,064,"Y06","QD3","24","UN","FW","S"

## **Appendix A Glossary**

## Introduction

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

Where terms refer to other terms within the glossary, they are connected by means of hot links to the relevant entries.

## **Code-Point glossary**

#### ABCDEFGHIJKLMNOPQRSTUVWXYZ

#### 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 text data product which relates Royal Mail Postcode Address File (PAF) addressed properties within Great Britain to the National Grid.

### area based postcode

A type of large user postcode which is allocated to a small number of organisations who receive an exceptionally large amount of mail. These postcodes still relate to a geographical area but may overlap other sector areas or be scattered.





### building

A physical, walled structure connected to foundations that has, or will have, a roof. This definition includes buildings surveyed at foundation stage.

### **CPLC** (Code-Point location coordinate)

A National Grid reference for each unit postcode. It is a two-dimensional coordinated point to a resolution of one metre. Coordinates are attributed from ADDRESS-POINT using an accuracy hierarchy.

### **Country code**

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

Country	Code
England	064
Scotland	179
Wales	220
N Ireland	152

### delivery point

A Royal Mail defined point to which mail is delivered. This may be a property (private address), organisation, mailbox or even the name of an individual. These categories are derived from *The Complete Guide to Postcode Products* from Royal Mail. 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, the General Registry Office (Scotland), Ordnance Survey (Northern Ireland) and Ordnance Survey. All these organisations are involved in the georeferencing of postcodes and the relating of postcodes to administrative and National Health areas and so on.

#### inward code or incode

See postcode.

#### Land-Line data

The Ordnance Survey's definitive product range of large-scale maps in digital form. Land-Line has a vector (point and line) structure which collectively forms 36 feature codes with a further 27 feature codes in Land-Line.Plus®, representing an accurate and detailed representation of the real world.

#### large user postcode

A large user postcode is allocated when:

- a firm or business at a new address regularly receives, in any one day, 25 or more items of mail in a town area or 50 or more items in a rural area:
- a private box (PO box) is provided;
- Royal Mail Selectapost service is provided;
- a Business Reply or Freepost licence is taken out; or
- all Freepost and Business Replies have their own postcode.

#### matched address

An address, resulting from a match between the Land-Line address data and the 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 one 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.





#### outward code or outcode

See postcode.

### **PAF (Postcode Address File)**

The PAF was created when all the separately held information was assembled and stored on a Royal Mail central computer system. PAF now contains the postal addresses and postcodes of approximately 26 million delivery points in Great Britain, including approximately 170 000 large users.

#### postal address

A postal address is a delivery point which is currently receiving mail. There may be many delivery points within an individual building structure as shown in Land-Line 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 postcode	
		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 substring 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 2 800 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 postcode district, whose area is identified by the number third from the end of a full postcode. There are approximately 9 000 postcode sectors in Great Britain. An example of a postcode sector code is 3 from GU12 3DH.

#### **Post Office box**

Generally, a non-geographic address allocated with a number by the Post Office. PO Boxes within ADDRESS-POINT are now matched to the Royal Mail delivery office at which they are based (except in the BT postcode area), rather than the average of matched addresses within the postcode sector. This will enable PO boxes to be matched with a PQI value of 10.

#### **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 unit postcode.

### unit postcode

See postcode.





# **Appendix B Product performance report form**

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

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

Your name:	Phone:
Organisation:	Fax:
Address:	Email:
Postcode:	Quotation or order reference:
Please record your comments or feedback in the space below.	

Please post this form to:

Ordnance Survey, Code-Point Product Manager, Romsey Road, Maybush, SOUTHAMPTON, SO16 4GU

