



# Boundary-Line™

User guide and technical specification

# Boundary-Line

## User guide

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## Preface

This user guide (hereafter referred to as the guide) is designed to provide an overview of Boundary-Line (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 G](#) and return it to us.

## Contact details

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ESRI is a registered trademark of Environmental Systems Research Institute, Inc.

MapInfo is a registered trademark of MapInfo Corporation.

## Backup provision of the product

You are advised to copy the supplied data to a backup medium.

## Using this guide

The documentation is supplied in portable document format (PDF) only. Free Adobe® Reader® software, which displays the guide, incorporates search and zoom facilities and allows you to navigate within. Hyperlinks are used to navigate between associated parts of the guide and to relevant Internet resources by clicking on the blue hyperlinks and the table of contents.

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

## Chapter 1 An introduction to Boundary-Line

This user guide is an introduction to Boundary-Line that offers guidance and advice on how to deliver the maximum value from the product. The [technical specification](#) provides specific details of the structure, content and formats of Boundary-Line for customers using the data in a geographical information system (GIS) or other systems. The technical specification should be used in conjunction with the user guide.

Boundary-Line provides administrative and electoral boundaries and their names for England, Scotland and Wales. Boundary-Line represents the hierarchy of boundaries in Great Britain.

Boundary-Line for England and Wales was initially digitised from Ordnance Survey's boundary record sheets at 1:10 000 scale (or, in some cases, at 1:10 560 scale).

The 1:10 000 scale published mapping has been progressively withdrawn as it is replaced by OS Landplan®. Boundary-Line now uses this as the source document, occasionally mapped against large-scale sources.

The Government Statistical Service (GSS) codes are supplied by the Office of National Statistics (ONS) and General Registers of Scotland (GROS).

Appropriate software is needed to use the data for your intended application.

### Boundary-Line benefits

The high specification of Boundary-Line offers you a number of benefits:

- Full coverage of Great Britain, supplied as England, Scotland and Wales.
- The key boundary dataset for Great Britain, suited to multiple applications using a GIS and other digital mapping systems.
- The full hierarchy of boundaries.
- Structured vector format, offering great functionality.
- [GSS codes](#) (where available) allow you to link Boundary-Line polygons with GSS information.
- Area values for every polygon.
- Mean high water (springs) mark enables you to build and explicitly identify dry land areas within coastal polygons.
- Documented annual updates allow you to easily identify relevant changes.
- Unique administrative area identifiers are retained at each update, allowing revised boundaries to be related to your existing data.

### Boundary-Line applications

Boundary-Line provides a detailed and comprehensive dataset of coverage in Great Britain of administrative and voting boundaries that is designed to support a wide range of GIS and desktop mapping applications, such as:

- political analysis;
- environmental analysis;
- statistical analysis for social or marketing decision-making;
- geo-demographic analysis;
- asset management;
- planning applications;
- legal work;
- reference and research; and
- customised graphic output.

## Requirements to utilise Boundary-Line

### Hardware

Provided that sufficient memory, storage facilities and a suitable software viewer application (see below) are available, there are no constraints on the hardware platforms that can be used. The range of hardware that can typically be used varies from higher specification personal computers (PCs) to mainframe computers.

### Software

Boundary-Line is inert data and does not include software for data manipulation. To fully exploit Boundary-Line it is necessary to use appropriate application software. There are many proprietary systems available and Ordnance Survey publishes a list of GIS, computer-aided design (CAD) and digital mapping system suppliers.

### Transfer formats

Boundary-Line is created in:

- BS 7567 (National Transfer Format (NTF) v2.0 Level 3)
- ESRI® Shapefile
- MapInfo® MID/MIF and TAB

### Media

Boundary-Line is supplied on DVD/CD.

### Update

Boundary-Line is now updated twice a year, spring and autumn, allowing a choice in which update is preferred.

The spring update represents boundaries (as defined and modified by Orders, Acts and Statutory Instruments) at the date of the May local elections.

The autumn update also represents boundaries at the date of the May local elections and is operative from the previous spring/May to autumn/October release.

Unlike changes to other boundaries, changes to Westminster constituency (parliamentary) boundaries do not come into operation on a defined date (see [effective date](#) and [operative dates](#)) and it is therefore difficult to timetable such changes into the spring or autumn updates. Therefore, any forthcoming Westminster constituency (parliamentary) boundary changes that have been approved by Government will be supplied as a separate file (in MapInfo or ESRI formats only) as part of the updates until they are included in the product.

## Chapter 2 Overview of Boundary-Line

### Data overview

#### Basic principles

Boundary-Line is the key dataset of administrative and voting boundaries in Great Britain. It is a representation in computer-readable form of a specialist large-scale map, including real-world objects, which may be tangible (such as the [mean high water](#) mark) or intangible (such as a district boundary).

GIS software provides the functionality to store, manage and manipulate this digital map data. The properties of the data make it suitable as a key base for users wishing to develop applications. Boundary-Line is also suitable for use within other digital mapping systems. Boundary-Line is coordinated on the [National Grid](#), which allows for the easy superimposition of other datasets.

**Links** represent all linear features; that is boundaries, [extent of the realm](#) (EOR), and mean high water (springs) mark (MHW). They are strings of coordinated line segments and have relationships to polygon features in order to convey descriptive characteristics of the link. Links in Boundary-Line may comprise up to several thousand line segments. A chain is the closed loop of links bounding a polygon.

**Nodes** are the representation of the points at the start and end of a link. At least one node occurs on the perimeter of a polygon where the bounding link completes the enclosure of the area. There may be many nodes connecting the bounding links of a polygon. Nodes are implicit in Boundary-Line.

**Polygons** are continuous areas defined by sets of bounding closed lines. They are representational of areas, such as electoral wards, and have relationships to administration collection features in order to convey descriptive characteristics of the polygon. These are explicit within the data and can be viewed and manipulated with appropriate software

Each link feature has associated geometry; this will be two or more coordinate pairs.

#### Boundary-Line data source

Boundary-Line is currently updated by mapping against OS Landplan (1:10 000 scale) and in certain cases, large-scale sources.

#### Boundary-Line features

A list of the features within Boundary-Line includes:

- Civil parish (England) and community (Wales);
- County;
- District;
- Electoral division (county and unitary);
- European electoral region;
- Greater London Authority;
- Greater London Authority Assembly constituencies (the London proportional representation voting areas);
- London borough (including the county of the City of London);
- Metropolitan district;
- Scottish parliamentary constituency and electoral region;
- Unitary authority;
- Ward (district, unitary, metropolitan and London borough);
- Welsh Assembly constituency and electoral region;
- Westminster (parliamentary) constituency;
- [extent of the realm](#) (EOR) – either [mean low water](#) mark (England and Wales), [mean low water springs mark](#) (Scotland) or seaward boundary extensions;

- [mean high water mark](#) (England and Wales) and/or [mean high water springs mark](#) (Scotland) (both are abbreviated to MHW in this user guide);
- distinctive names;
- GSS codes in England, Wales and Scotland for all units with exception of Greater London Authority, county electoral divisions and non-civil-parish areas;
- area measurements;
- unique administrative unit, link and polygon identifiers; and
- annual updates of the dataset.

## Boundary-Line files and sub-levels

The data is supplied as named files. The named files include all of the other relevant sub-levels of electoral boundaries that belong under that high level administration; these are:

Named file type	Possible sub-level of boundaries within the named file
County	The named county, district, district ward, civil parish, county electoral division (ED).
Unitary authority	The named unitary authority, unitary authority ward or unitary authority ED as appropriate, civil parish where appropriate, together with community in Wales.
Metropolitan district	The named metropolitan district, metropolitan district ward, civil parish where appropriate.
Greater London Authority	The Greater London Authority, Greater London Authority Assembly constituency, London borough, London borough ward.
Scottish parliamentary electoral region	The named Scottish parliamentary electoral region, Scottish parliamentary constituency.
Welsh Assembly electoral region	The named Welsh Assembly electoral region, Welsh Assembly constituency.
Westminster constituency	The named Westminster constituency.
European region	The named European region.

The following table represent the named files contained in Boundary-Line October 2013 specification:

- A complete dataset of Great Britain has 830 named files, made up of:
  - 27 county files;
  - 110 unitary authority files;
  - 632 Westminster constituency files;
  - 11 European region files;
  - 36 metropolitan district files;
  - 1 Greater London Authority file;
  - 8 Scottish parliamentary electoral region files; and
  - 5 Welsh Assembly electoral region files.
- The dataset for England has 662 named files, made up of:
  - 27 county files;
  - 56 unitary files;
  - 533 Westminster constituency files;
  - 9 European region files;
  - 36 metropolitan district files; and
  - 1 Greater London Authority file.

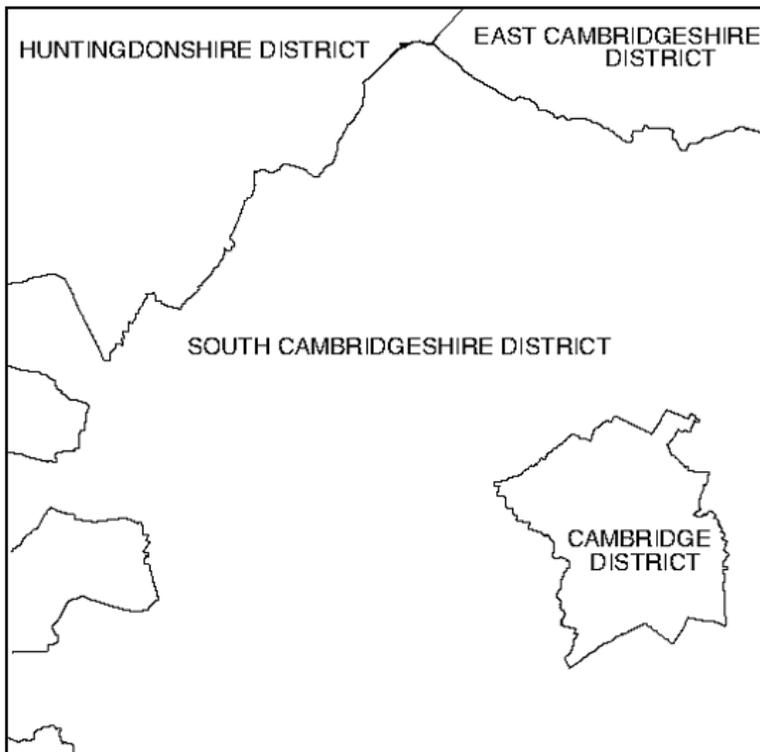
- The dataset for Wales has 68 named files, made up of:
  - 22 unitary authority files;
  - 40 Westminster constituency files
  - 1 European region file; and
  - 5 Welsh Assembly electoral region files (these include the Welsh parliamentary files).
- The dataset for Scotland has 100 named files, made up of:
  - 32 unitary authority files;
  - 59 Westminster constituency files;
  - 1 European region file; and
  - 8 Scottish parliamentary electoral region files (these include the Scottish parliamentary files).

As a consequence of the named file supply, all coordinates in the supplied data file are full Ordnance Survey National Grid coordinates, as there is no concept of local origin.

## Complex polygons

Complex polygons are polygons that wholly enclose other polygons. They only occur when an administrative unit wholly encloses one or more others at the same level, for example, a rural district surrounding an urban district.

**Figure 2.1:** a complex polygon – Cambridge District surrounded by South Cambridgeshire District



## Feature information

Boundary-Line has three feature classes:

- administrative units with attributes;
- polygon features with attributes; and
- linear features – links with attributes and geometry.

The position and shape of real-world features are represented in Boundary-Line data as geometric structures of links. They are arranged into recognisable categories. Full listings of individual features are listed in chapter 2 of the technical specification: [Specific Boundary-Line NTF information](#).

Each feature has the following component:

- feature attribute data.

Each geometric feature has an additional component:

- feature position.

Each link has a geometric and attribute component. The geometric component defines the positional characteristic of the feature, and explicit relationships exist between administrative units and polygons and the links and polygons. The attribute component defines the descriptive characteristics of the feature, together with the classification.

## Feature position

The geometry of map features is defined in terms of coordinates. All coordinates used in Boundary-Line are based on the Ordnance Survey [National Grid](#) (NG) coordinate referencing system and are quoted to a 0.1 m resolution. Despite this, Boundary-Line data can be no more accurate than its source, primarily the generalised 1:10 000 scale mapping. There will be positional differences between the boundaries in Boundary-Line and Ordnance Survey large-scale topographic products. This is due to the large-scale products being surveyed to a higher degree of accuracy and associated to ground surface features, at scales such as 1:1250 and 1:2500.

Boundary-Line has been created as a more generalised set of administrative and electoral boundaries for the whole of Great Britain. It has been digitised against Ordnance Survey (generalised) 1:10 000 scale OS Landplan mapping. The process of generalising for 1:10 000 scale mapping may have caused certain features to be moved from their true ground position for the purposes of map clarity. The result being that Boundary-Line and large-scale boundaries will not always be coincident.

## Feature attribute data

An attribute is the descriptive characteristic of a feature, that is, a non-spatial element. In Ordnance Survey map data terms, an attribute can be a feature type (these are character codes), or a distinctive name, number or code, for example, *Bassett Ward* or *145.232 hectares*.

Attribute codes relevant to NTF are fully described in [chapter 4 of the technical specification](#).

## Area codes

Each administrative unit is classified by means of an area code (AC). These area codes are allocated when each feature is initially interpreted and captured from source. This means that a county is distinguished from a ward by the area code allocated to it. The polygon features can be classified by tracing their relationships to administrative units. Consequently, links can be classified by tracing their relationships to polygons. These area codes are all listed in [chapter 2 of the technical specification](#).

## Other attributes

It is possible, with appropriate software, for you to add other names or values of your own choice as attributes of features.

## Unique identifiers for administrative unit, link and polygon

There are three identifiers in Boundary-Line that help you identify features and which are provided to create consistent references between successive releases of Boundary-Line data. They are unique within each feature type throughout the whole dataset and maintained through successive annual updates. See chapter 2 in the technical specification for [other attributes and ID information](#). These identifiers are never modified – only created or deleted. If a feature is deleted from the Boundary-Line database then the identifier ceases to exist.

[ADMIN\\_AREA\\_ID \(AI\)](#)

[GLOBAL\\_LINK\\_ID \(LK\)](#)

[GLOBAL\\_POLYGON\\_ID \(PI\)](#)

## Text

There is no direct cartographic text in Boundary-Line. Names, area values and GSS codes are held as attributes.

## Chapter 3 Boundary-Line explained

### Relationships of administrative areas

The Boundary-Line product supplies the administrative area relationships explicitly within the [COLLECT] record.

A district is a division of a county; a civil parish is a division of a district. A county is divided for voting purposes into electoral divisions (EDs) and a district is divided for voting purposes into district wards.

With the introduction of unitary authorities, there are now two- and three-tier local government hierarchies. The three-tier system remains unchanged; the two-tier system has unitary authorities replacing the county and district levels of administration.

Unitary authorities may be divided into civil parishes or communities (except in Scotland), and unitary authority wards or unitary authority EDs for voting purposes. In Wales, the voting area is the unitary authority ED; in Scotland it is the unitary authority ward and in England it is the unitary authority ward or unitary authority ED).

England also has metropolitan districts; these have no county administration. These districts are divided for voting purposes into metropolitan district wards.

With the introduction of the regional government for London, in this document called the Greater London Authority, the proportional representation voting area for this new administration is the Greater London Authority Assembly constituency. The existing London borough structure also has a relationship with the new Greater London Authority and each London borough is divided for voting purposes into London borough wards.

Scotland is divided into parliamentary constituencies for voting purposes; to elect Members of the Scottish Parliament (MSPs). The Scottish parliamentary electoral region is a grouping of Scottish parliamentary constituencies.

Wales is divided into assembly constituencies for voting purposes; to elect assembly members (AMs) to the Welsh Assembly. The Welsh Assembly electoral region is a grouping of Welsh Assembly constituencies.

Great Britain is divided into European regions (Scotland, Wales and nine English regions) for voting purposes; to elect members (MEPs) to the European Parliament.

England, Scotland and Wales are divided into parliamentary constituencies for voting purposes to elect members (MPs) to the Westminster Parliament. Parliamentary constituencies are made up of combinations of wards (or electoral divisions in Wales).

Boundary-Line data is output in two structures:

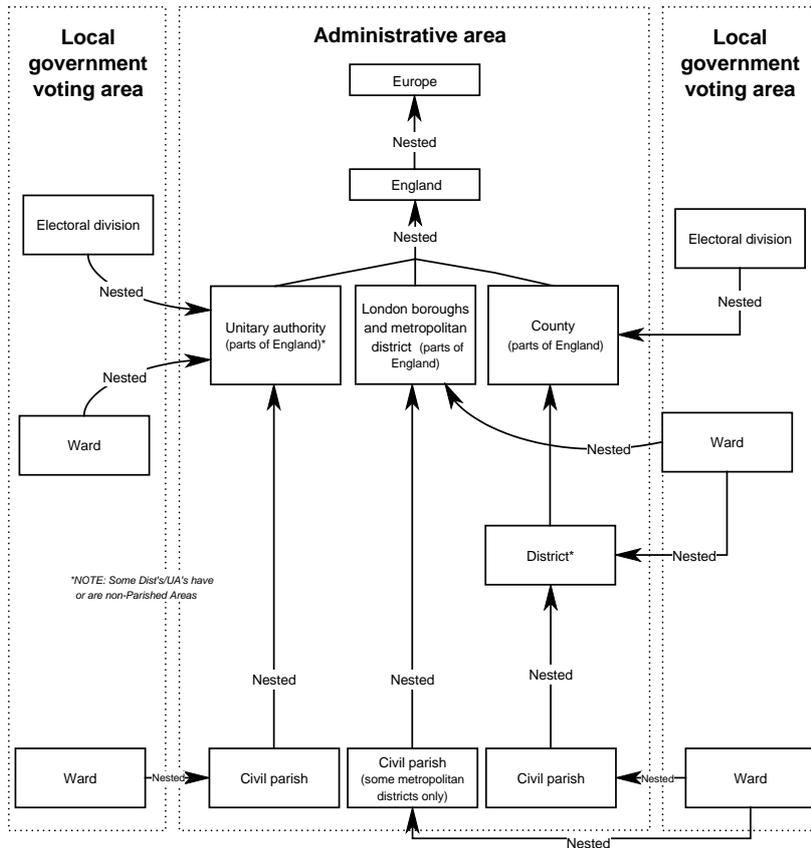
- **Nested**

The data is supplied by named files; all the named files include all of the other sub-levels of electoral boundaries that belong under that high-level administration (for example, a county file) will have the named county, district, district ward, civil parish and county ED contained within. Unitary authorities will have named unitary authority, unitary authority ward or unitary authority ED as appropriate, civil parish where appropriate, together with community in Wales. The nested structure is available in NTF, ESRI Shapefile and MapInfo MID/MIF and TAB.

- **Layered**

This is a simplified file structure supplying the boundaries as individual files; for example, the county file contains only counties, and the unitary authorities file contains only unitary authorities. The layered structure is only available in ESRI Shapefile and MapInfo MID/MIF and TAB.

**Figure 3.1a: relationships of administrative areas for England (nested)**



**Figure 3.1b: relationships of administrative areas for Wales (nested)**

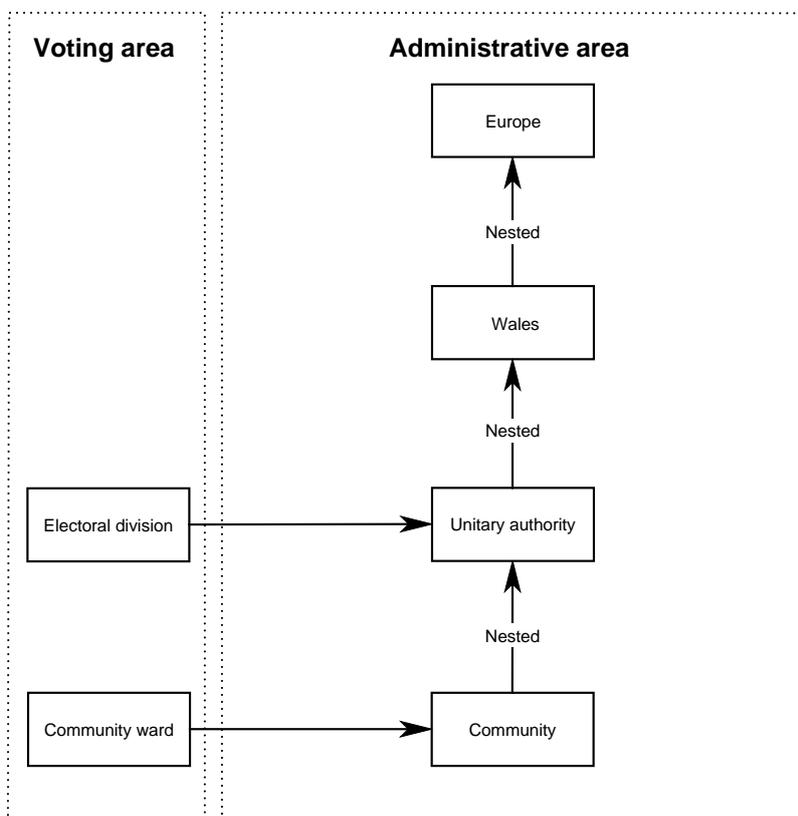


Figure 3.1c: relationships of administrative areas for Scotland (nested)

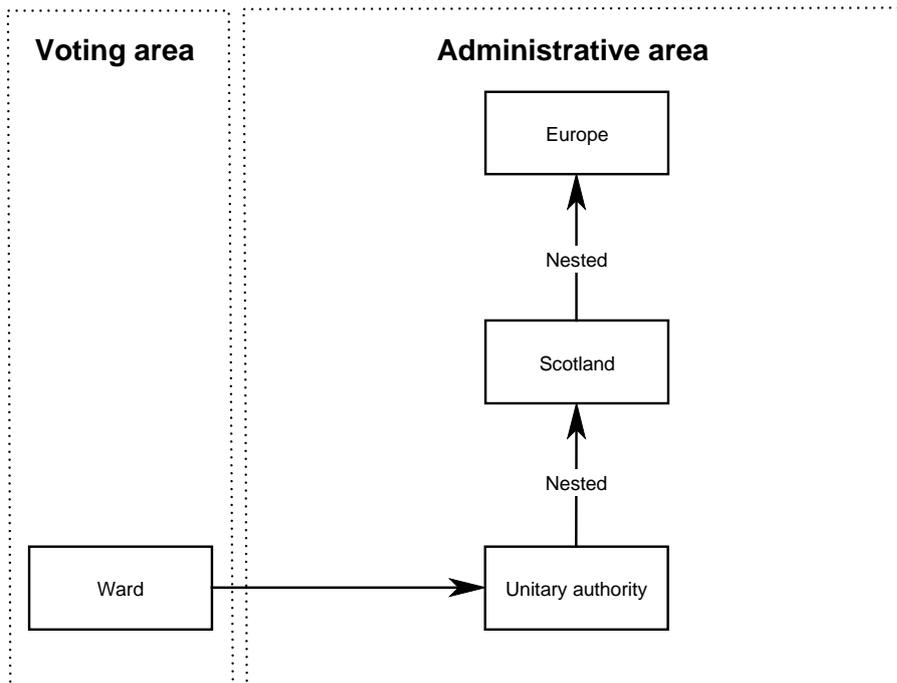


Figure 3.2a: an example of the English directory and layered files (MapInfo)

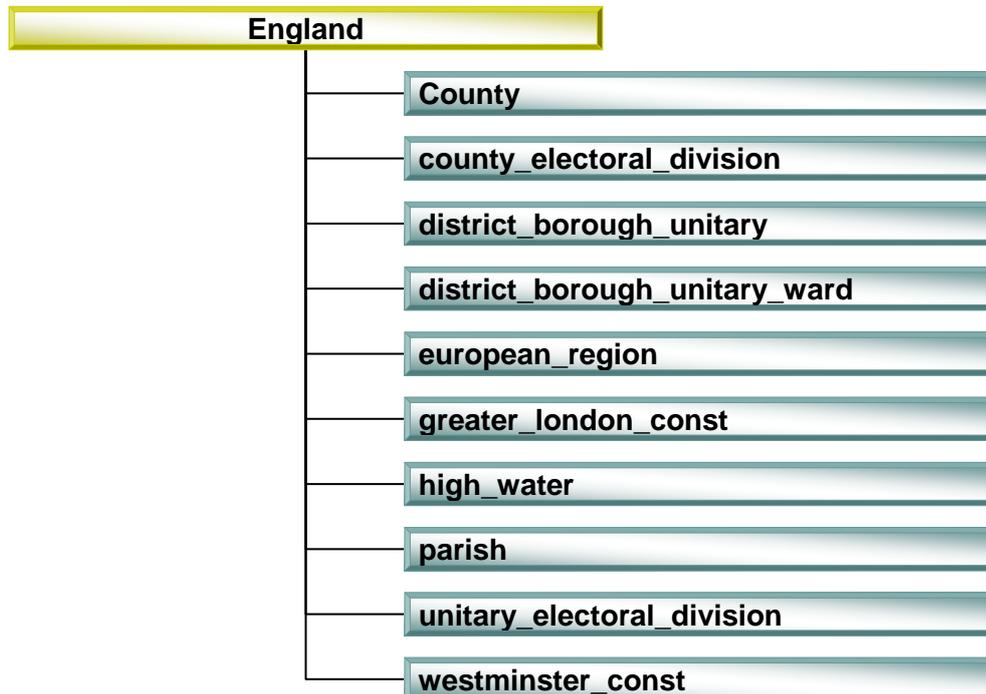
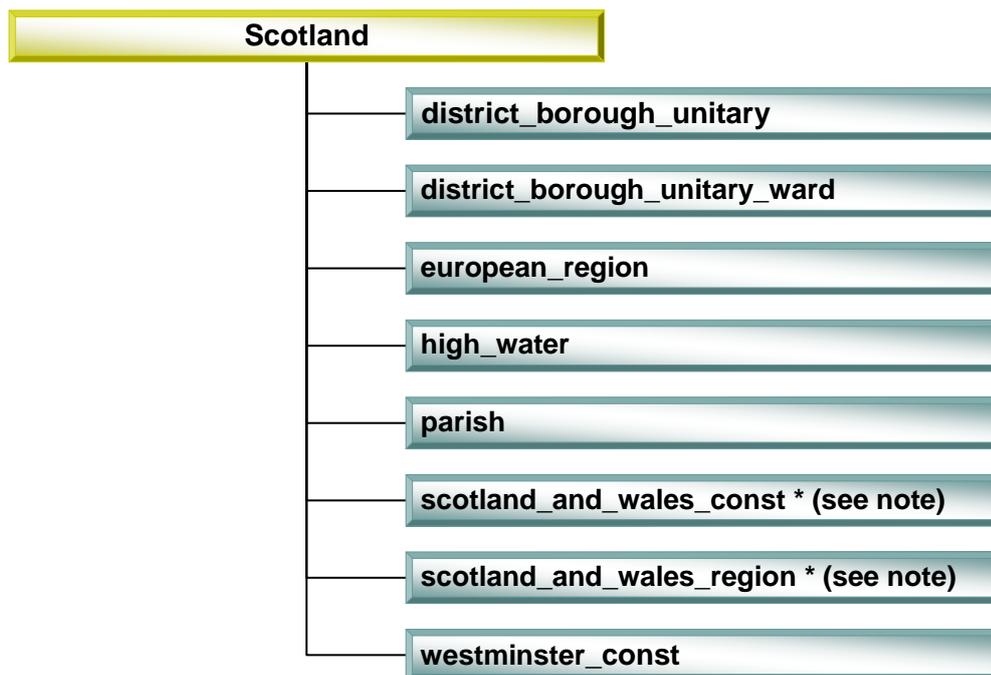
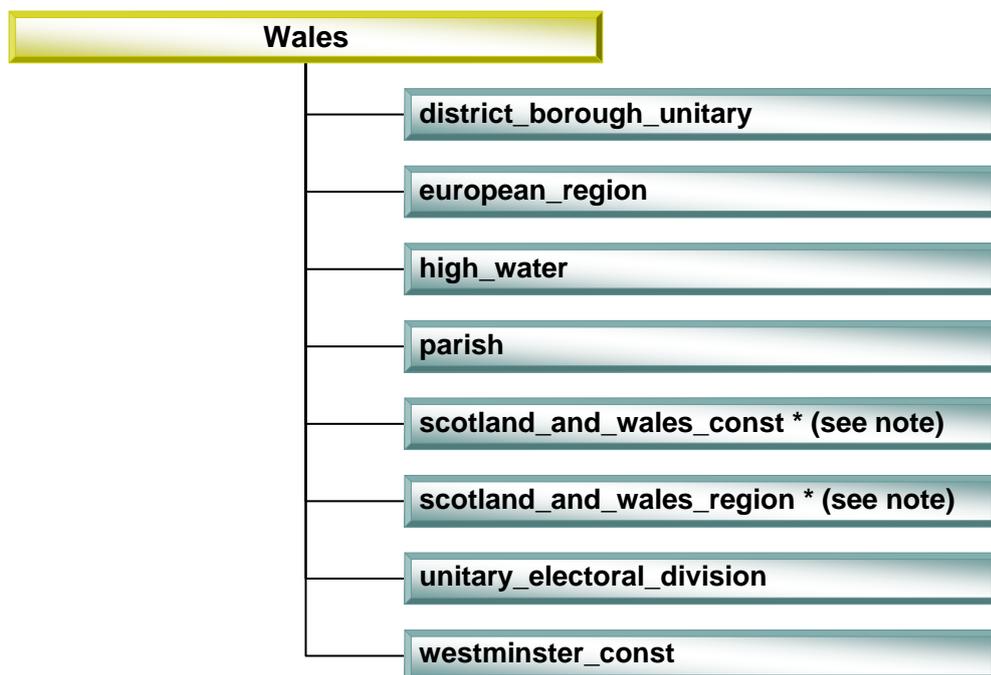


Figure 3.2b: an example of the Scottish directory and layered files (MapInfo)



NOTE: \* Scotland\_and\_Wales files contain only Scottish information in the Scotland **data** folder and only Welsh information in the Wales **data** folder.

Figure 3.2c: an example of the Welsh directory and layered files (MapInfo)



NOTE: \* Scotland\_and\_Wales files contain only Scottish information in the Scotland **data** folder and only Welsh information in the Wales **data** folder.

## Boundary-Line principles and features

This following explains the representation of features in Boundary-Line and describes various definitions and exceptions.

### Administrative area

A term used by Ordnance Survey to refer to all public administrative areas. For the Boundary-Line dataset, the following are included under this term:

- In England:
  - County;
  - Unitary authority;
  - Metropolitan district;
  - District;
  - Civil parish (*NOTE: depicted if appropriate notification has been received. Not all parishes have councils*);
  - European electoral region;
  - Parliamentary (Westminster) constituency;
  - Electoral division (of county or unitary authority);
  - Ward (of district, metropolitan district, London borough, unitary authority);
  - London borough (including the county of the City of London);
  - Greater London Authority; and
  - Greater London Authority Assembly constituency.
- In Wales:
  - Unitary authority;
  - Community (*NOTE: depicted if appropriate notification has been received*);
  - European electoral region;
  - Parliamentary (Westminster) constituency;
  - Electoral division (of unitary authority);
  - Welsh Assembly constituency; and
  - Welsh Assembly electoral region.
- In Scotland:
  - Unitary authority;
  - European electoral region;
  - Parliamentary (Westminster) constituency;
  - Ward (of unitary authority);
  - Scottish parliamentary constituency; and
  - Scottish Parliament electoral region.

### Area values

Area values exist for every polygon in Boundary-Line; area values are quoted to the current Department for Communities and Local Government (DCLG) specification of 0.001 hectare. The value is subject to the inherited accuracies of the generalised 1:10 000 scale published mapping used as the source for Boundary-Line.

### Boundary

A boundary is the limit of a preset and established area whose limit is determined by one or more lines. For example, in Boundary-Line, an administrative unit boundary is represented by a county area boundary.



- Greater Manchester;
- Merseyside;
- South Yorkshire;
- West Yorkshire;
- Tyne and Wear; and
- West Midlands.

## The Inner and Middle Temples

The 'places' known as 'The Inner and Middle Temples' are within the City of London only for some purposes. They are not shown in Boundary-Line, but their areas have been wholly included within the city and its wards for this dataset. There are two distinct areas with other areas held jointly, and the boundaries are so intermixed that they have never been published by Ordnance Survey separately. A record of these boundaries is, however, held in the Boundary Record Library for reference purposes.

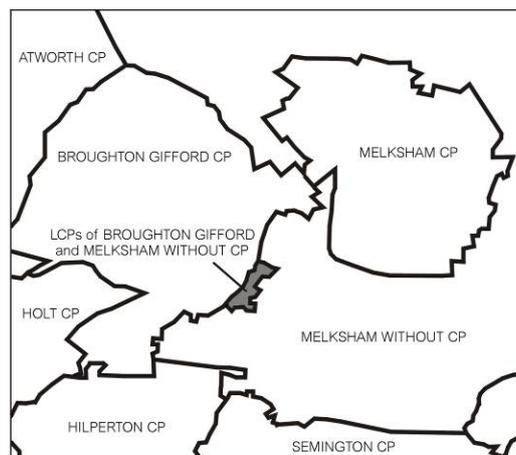
## Parish/community wards

Divisions of parishes (England) and communities (Wales) not included in Boundary-Line.

## Lands common to

These are areas where the limits of the parishes concerned have not been determined and the area itself is common to (or belongs to) two or more parishes. In Boundary-Line, they are classified as separate parishes with the name *LANDS COMMON TO THE PARISHES OF...* applied (sometimes abbreviated to *LCPs...*). These areas are allocated their own [AI attributes](#) and so on.

**Figure 3.4:** an example of lands common to



## River Dee

The boundary between Wirral metropolitan district in the former county of Merseyside and Cheshire West and Chester unitary authority in the former county of Cheshire and the Flintshire unitary authority area has not been determined, and the line adopted in Boundary-Line is for the purposes of Ordnance Survey only, so that polygons can be created.

## River Mersey

Certain sections of the boundary between the former county of Merseyside (containing the metropolitan districts of Liverpool and Wirral), and in the former county of Cheshire, now Cheshire West and Chester, and Halton have never been determined.

For the purposes of Boundary-Line, and by agreement with DCLG:

- 1 the district boundaries of those parts of Cheshire West and Chester that abut the Mersey estuary have been made coincident with the limits of the relevant district's wards at the centre of the channel at high water (CCHW);

- 2 the undetermined part of the southern boundary of Liverpool district, in the Mersey estuary, has been made coincident with the limits of that district's wards at the CCHW;
- 3 the undetermined part of the county boundary between the former county of Merseyside and the former county of Cheshire in that part of the estuary between the new Cheshire West and Chester and Liverpool has been made coincident with the limits of the wards at the CCHW; and
- 4 the northern limit of the parliamentary constituency of Ellesmere Port and Neston is the mean high water mark on the south side of the Mersey estuary.

## The wards of Windsor Castle

These 'wards', which include the personal apartments of the Sovereign have no relevance to the election of councillors to electoral areas and are wholly included within the district of Windsor and Maidenhead and its wards.

## Government Office Regions (GORs)

Government Office Regions are *not* represented as specific boundary features in Boundary-Line; however, the boundaries that are used to define the GORs are represented as **European regions**. A full list of the counties and unitary authorities that represent each European region which the GORs are based on are listed at [annexe B](#). Additional GOR information can be found at [www.statistics.gov.uk/official](http://www.statistics.gov.uk/official). This will identify the GORs defined by the Office for National Statistics, which only covers England. We have also included Scotland and Wales European Regions to complement the product's GB coverage.

*NOTE: The Government Office Network closed on 31 March 2011.*

## Honorary titles

Honorary titles granted to local government areas, such as city and town are not included in Boundary-Line.

Boroughs in England have been identified, as from the October 2006 release, with (B) in the file name and (B) in the Name attribute, for example;

`CITY_OF_SOUTHAMPTON (B)` = File name

`CITY OF SOUTHAMPTON (B)` = NAME attribute

The borough (B) will only be depicted on unitary authorities, district and metropolitan districts. This addition is to purely denote which boundaries have borough status in England without creating polygons or altering the specification in any way.

## National boundaries

The boundaries between England and Wales and England and Scotland are treated as county boundaries in Boundary-Line, which have been created from the local authority boundaries.

## Government Statistical Service codes

These [codes](#) are a unique system of referencing for administrative units.

The Office for National Statistics has reconfigured its GSS coding structure (providing a unique system of referencing for administrative units) to a new nine-character alphanumeric format, replacing the former alphanumeric format (up to six characters). The GSS codes were imported into the October 2010 release of Boundary-Line.

The new GSS coding and naming policy for some statistical geographies were fully implemented on 1 January 2011; where new codes have been allocated, they should be used in all exchanges of statistics and published outputs that normally include the statistical codes.

All types of unit are coded in Boundary-Line with the exception of Greater London Authority, county electoral divisions and non-civil-parish areas.

The codes are allocated by the Office of National Statistics (ONS) for England and Wales and by the General Register Office for Scotland (GROS) for Scottish areas.

*NOTE: beginning with the October 2010 release, a nine-figure coding format has replaced the six-figure coding. No longer is there any relationship between principal areas and their subdivisions, 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.*

County ED code is set at 999999999.

The code is blank when the administrative unit does not have a code, for example non-civil-parish areas.

## Operative dates

This is a calendar date, given in an Order, Act or Statutory Instrument, on which the specified boundary changes will come into operation. Dates given may be up to four years after the publication of the Order, Act or Statutory Instrument and may apply to any type of boundary other than parliamentary or European regions.

*The Westminster (parliamentary) constituency boundaries have an Effective date, rather than an Operative Date 'The Effective Date will be the date of a general election, meaning any changes to these boundaries will apply as and from the date of the next election.'*

## Order, Act or Statutory Instrument

A document signed by the relevant Secretary of State or a local authority letter describing and giving legal authority for boundary changes. Other Acts and Orders can effect the addition of new boundary information, for example, seaward extensions and harbour acts.

## Superseded date

This is the last date on which a boundary was current. Where an effective date applies, the superseded date will be the day before the next dissolution of Parliament, or the day before the next European Assembly election in the United Kingdom.

Boundaries are no longer shown in Boundary-Line if they have been superseded at the time of the annual snapshot of boundaries that each release of Boundary-Line represents.

## Survey change

When changes occur to tidelines, rivers or streams caused by natural and gradual forces, any boundaries that are linked to these altered features will move with them. When the movement of a boundary, MHW or EOR alignment in Boundary-Line reflects such changes, this will be noted in the update notes that accompany each release of Boundary-Line.

## Unannexed areas

This is an area within the realm that is not included in all the relevant administrative units. The area will remain unannexed until further legislation changes its situation and the polygon represents a hole in that level of administration.

## Unitary authorities

Unitary authorities and counties effectively create a contiguous layer of administrative units throughout the whole of Great Britain. They represent single-tier administrations with responsibility for all areas of local government.

## The coastline and associated items

### Extent of the realm (EOR)

The external bounding line of the Boundary-Line dataset is the extent of the realm. This means the boundary extent is digitised on the alignment of the mean low water (springs)(MLWS) for the seaward extent. Boundary-Line does not contain a separate mean low water (springs) (MLWS) only FC0071 representing the mean high water (MHW).

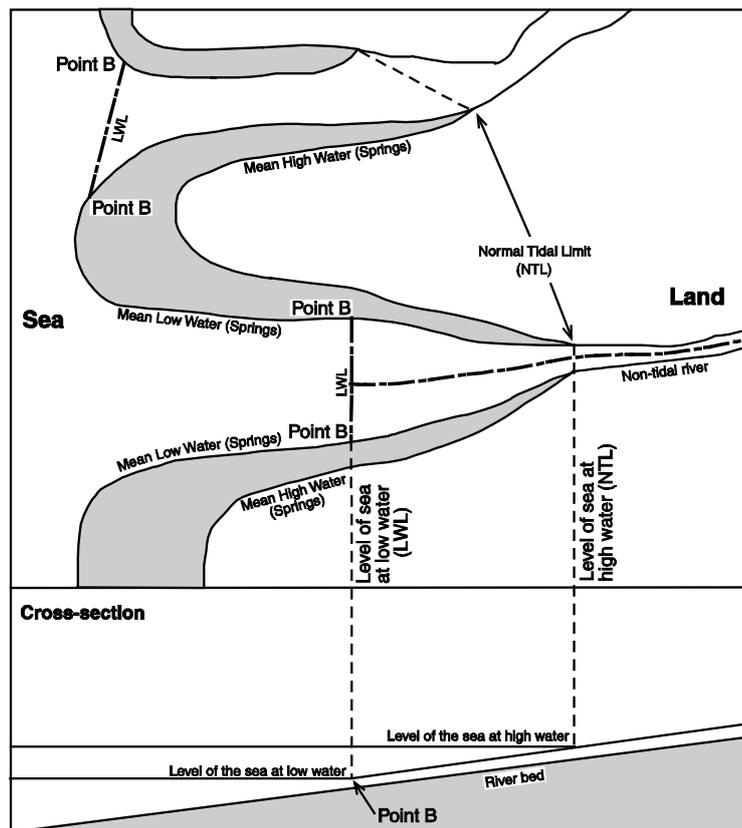
*NOTE: to display the EOR, both MHW and another type of boundary, for example, European electoral region or Westminster constituency, need to be displayed together.*

The *Territorial Waters Jurisdiction Act 1878* and the *Territorial Waters Order in Council 1964* confirm that the extent of the realm of Great Britain as used by Ordnance Survey is properly shown to the limit of mean low water for the time being, except where extended by Parliament.

This means that the extent of realm will be:

- the **mean low water mark** (**mean low water springs** in Scotland) except when landward of a **seaward extension** or as shown below in Figure 3.5a and indicated as **Point B**;
- the **mean high water mark** (**mean high water springs** in Scotland), where coincident with mean low water or mean low water springs, but not when landward of a seaward extension or Point B;
- Point B; and
- seaward extensions.

**Figure 3.5a:** treatment of boundaries in estuaries



In this figure, the extent of the realm (EOR) follows mean low water, crossing the estuaries at LWL.

## Foreshore

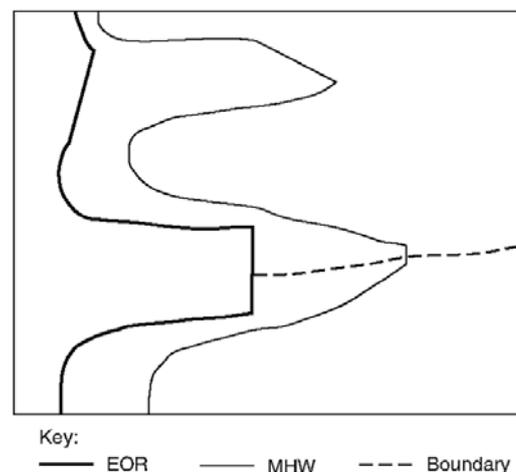
The foreshore is taken to be the area of land between **mean high water (springs)** mark and the **extent of the realm** which will include:

- tidal water within a **seaward extension**; and
- tidal water above **Point B** (Figure 3.5a), to the **normal tidal limit (NLT)**, together with the area between mean high water (springs) mark and the edge of the channel at **mean low water (springs)**.

Mean high water (springs) mark is represented in Boundary-Line by a continuous link feature with feature code 0071. Mean low water (springs) mark is not shown, although it is generally coincident with the EOR.

The area of non-inland is referenced within each administrative unit using the NA attribute.

**Figure 3.5b:** treatment of estuaries in Boundary-Line



This figure shows how the features depicted in figure 3.5a are represented in Boundary-Line.

## Islands and rocks in the sea

The following rules govern the representation in Boundary-Line of offshore islands and rocks in the sea:

- offshore rocks and islands will be shown if 0.4 hectares or more in area at high tide;
- offshore islands with buildings will always be shown, irrespective of size;

Offshore islands or rocks will not be shown if they are:

- beyond the defined extent of the realm, irrespective of size; or
- covered at high tide.

If an offshore island or rock is shown, it will be contained within all the relevant administrative unit collections.

## Mean high water (springs)

The mean high water (springs) mark is shown to NTL.

Areas of salt marsh, mudflats and so on often have very complicated tide lines. For ease of digitising and to reduce data volumes, mean high water may be generalised in these areas (not Scotland).

Mean high water (springs) mark is represented in Boundary-Line by a continuous link feature with feature code 0071.

Mean high water (springs) mark is subject to continuous change but the captured alignment of a tide line is a snapshot on one day. It is not practical to revise tide lines very frequently.

## Mean low water (springs)

Mean low water (springs) mark is shown as the extent of the realm, except when contained within a seaward extension, when it is then omitted.

Banks of sand, mud, shingle or rock separated from the main line of mean low water (springs), and covered at high tide, are not shown. When there are large areas of these banks separated from the main foreshore by narrow channels, the channels are ignored and the whole bounded by mean low water (springs).

The extension of the line of mean low water (springs) into a channel above [Point B](#) becomes edge of channel and is not shown.

Mean low water (springs) mark, and hence [EOR](#) is subject to continuous change but the captured alignment of a tide line is a snapshot on one day. It is not practical to revise tide lines very frequently.

## Normal tidal limit (NTL)

The point at which the level of a river or stream ceases to be affected by the tidal flow. This point is often an artificial barrier such as a lock or weir.

## Pier

A pier under which water flows is not normally considered to be within the realm. There are some cases, however, where a structure has specifically been included within the realm by act or order, in which case mean high water (springs) mark and EOR is shown around the limits of the structure.

## Point B

This is the intangible line across a channel where the level of the river meets the level of the sea at low water.

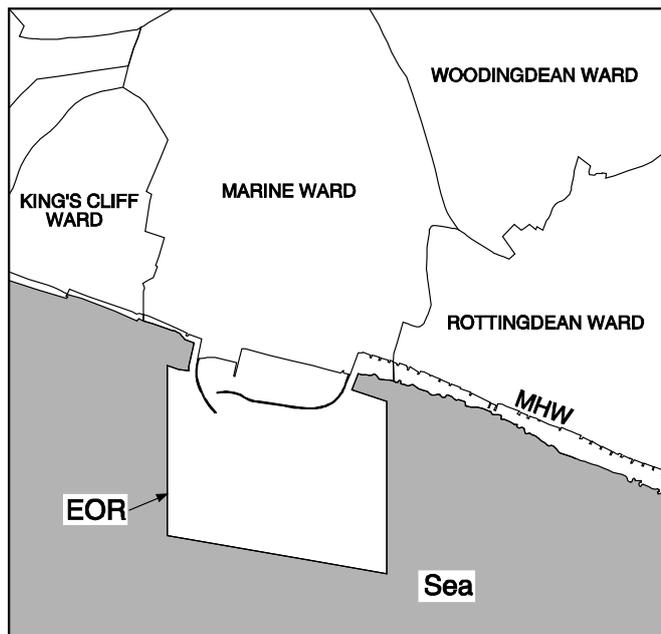
Within large channels or estuaries Point B is defined on the source documents for Boundary-Line, and is therefore shown as [EOR](#).

In small channels, Point B is not shown on the source documents, so is assumed to be along the general line of low water and is shown as EOR.

## Seaward extensions

These are artificial extensions to the realm that have been made by Act of Parliament. They extend the local government and parliamentary areas seaward of mean low water (springs) mark.

**Figure 3.6:** A seaward extension



### Structures in the sea

Breakwaters are structures of wood, stone, metal or other material built to break the force of waves. They can be separate from, or joined to, the mainland. If joined, they are generally included in the local government and parliamentary areas. If separate, they are not part of the local government and parliamentary area unless they are placed therein by legislation of some kind, for example, Plymouth breakwater is included in the local government area whilst the centre portion of the Portland Harbour breakwater is not.

Permanent or solid structures in the sea, such as the forts in the Solent off Portsmouth Harbour and Brighton Marina, are usually included in local government and parliamentary areas.

## Chapter 4 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
<b>Completeness</b>	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.
<b>Logical consistency</b>	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.
<b>Positional accuracy</b>	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.*
<b>Temporal accuracy</b>	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.
<b>Thematic accuracy (attribute accuracy)</b>	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 Change update: Statutory Instruments (SI) and non-SI changes in October 2013 – Boundary-Line release

### England

County	District/Unitary Authority /London Borough/ Metropolitan District	Operative date	SI year	SI number	Comments
			(if applicable)		
HERTFORDSHIRE	EAST HERTFORDSHIRE / STEVENAGE	01 Apr 2013	2013	596	District Order
	GATESHEAD / NORTHUMBERLAND	01 Apr 2013	2013	595	Met District / Unitary Order
NORTHAMPTONSHIRE	NORTHAMPTON	01 Apr 2013	N/A	N/A	Parish Order
	BEDFORD	27 Mar 2013	N/A	N/A	Elstow Ward renamed Elstow and Stewartby
BUCKINGHAMSHIRE	CHILTERN	09 Apr 2013	N/A	N/A	Latimer CP renamed Latimer and Ley Hill
HAMPSHIRE	EAST HAMPSHIRE	09 May 2013	N/A	N/A	Froxfield CP renamed Froxfield and Privett
NORFOLK	SOUTH NORFOLK	28 Jan 2013	N/A	N/A	Runhall CP renamed Brandon Parva, Coston, Runhall and Welbourne
	WILTSHIRE	01 Apr 2013	N/A	N/A	Wootton Bassett CP renamed Royal Wootton Bassett
	NORTHUMBERLAND	01 Oct 2013	N/A	N/A	Amend ED bdy
	CORNWALL	01 Oct 2013	N/A	N/A	Amend ED bdy
	ROTHERHAM	01 Oct 2013	N/A	N/A	Amend CP bdy
	MEDWAY	01 Oct 2013	N/A	N/A	Amend MHW
CUMBRIA	BARROW / SOUTH LAKELAND	01 Oct 2013	N/A	N/A	Amend MHW
SURREY / GREATER LONDON	TANDRIDGE / CROYDON	01 Oct 2013	N/A	N/A	Amend County bdy
	HARROW / HILLINGDON	01 Oct 2013	N/A	N/A	Amend LB bdy
LINCOLNSHIRE	EAST LINDSEY / NORTH EAST LINCOLNSHIRE	01 Oct 2013	N/A	N/A	Amend bdys at MLW
	BIRMINGHAM	01 Oct 2013	N/A	N/A	Amend Met Dist, Const & Ward bdys
	COVENTRY	01 Oct 2013	N/A	N/A	Amend Met Dist, Const & Ward bdys
	DUDLEY	01 Oct 2013	N/A	N/A	Amend Met Dist, Const & Ward bdys
	SANDWELL	01 Oct 2013	N/A	N/A	Amend Met Dist, Const & Ward bdys
	SOLIHULL	01 Oct 2013	N/A	N/A	Amend Met Dist, Const & Ward bdys
	WALSALL	01 Oct 2013	N/A	N/A	Amend Met Dist, Const & Ward bdys

County	District/Unitary Authority /London Borough/ Metropolitan District	Operative date	SI year	SI number	Comments
			(if applicable)		
	WOLVERHAMPTON	01 Oct 2013	N/A	N/A	Amend Met Dist, Const & Ward bdys
	KNOWSLEY	01 Oct 2013	N/A	N/A	Amend Met Dist, Const & Ward bdys
	LIVERPOOL	01 Oct 2013	N/A	N/A	Amend Met Dist, Const & Ward bdys
	ST HELENS	01 Oct 2013	N/A	N/A	Amend Met Dist, Const & Ward bdys
	WIRRAL	01 Oct 2013	N/A	N/A	Amend Met Dist, Const & Ward bdys

## Scotland

Unitary Authority	Operative date	SI year	SI number	Comments
		(if applicable)		
CLACKMANNANSHIRE	01 Oct 2013	N/A	N/A	Amend MHW
DUMFRIES AND GALLOWAY	01 Oct 2013	N/A	N/A	Amend MHW
NORTH LANARKSHIRE / SOUTH LANARKSHIRE	01 Oct 2013	N/A	N/A	Amend UA bdy

## Wales

Unitary Authority	Operative date	SI year	SI number	Comments
		(if applicable)		
CARDIFF, MERTHYR TYDFIL, POWYS, RHONDDA CYNON TAF, VALE OF GLAMORGAN	15 Nov 2012	2011	2987	Assembly Electoral Region and Const Amendment Order
BLAENAU GWENT	01 Oct 2013	N/A	N/A	Amend UA bdy
CAERPHILLY	01 Oct 2013	N/A	N/A	Amend UA bdy
CARDIFF	01 Oct 2013	N/A	N/A	Amend UA bdy
CARMARTHENSHIRE	01 Oct 2013	N/A	N/A	Amend UA bdy
CEREDIGION	01 Oct 2013	N/A	N/A	Amend UA bdy
CONWY	01 Oct 2013	N/A	N/A	Amend UA bdy
DENBIGHSHIRE	01 Oct 2013	N/A	N/A	Amend UA bdy
GWYNEDD	01 Oct 2013	N/A	N/A	Amend UA bdy
MERTHYR TYDFIL	01 Oct 2013	N/A	N/A	Amend UA bdy
MONMOUTHSHIRE	01 Oct 2013	N/A	N/A	Amend UA bdy
NEATH PORT TALBOT	01 Oct 2013	N/A	N/A	Amend UA bdy
NEWPORT	01 Oct 2013	N/A	N/A	Amend UA bdy
PEMBROKESHIRE	01 Oct 2013	N/A	N/A	Amend UA bdy
POWYS	01 Oct 2013	N/A	N/A	Amend UA bdy
RHONDDA CYNON	01 Oct 2013	N/A	N/A	Amend UA bdy

TAFF				
SWANSEA	01 Oct 2013	N/A	N/A	Amend UA bdy
TORFAEN	01 Oct 2013	N/A	N/A	Amend UA bdy

## Changes not incorporated into the October 2013 Boundary-Line update

### Residual Statutory Instruments (SIs) and non-SIs

#### England

County	District/Unitary Authority /London Borough/ Metropolitan District	Operative date	SI year	SI number	Comments
			(if applicable)		
HERTFORDSHIRE	THREE RIVERS	01 Sep 2013	N/A	N/A	Parish Order
NORFOLK	BROADLAND	01 Jun 2013	N/A	N/A	Parish Order

Boundary-Line only represents the boundaries that are currently operational; future dated or unsigned SIs will not be included. This ensures that the boundary information currency is correct at the time of the dataset release.

\* SIs that are operational in May and or October but signed off too late for inclusion in the May or October products would be included in the next suitable release.

## Annexe B Boundaries that relate to Government Office Region

Government Office Region	County and unitary authority (UA)	
<b>East of England</b>		
	Bedford	Suffolk county
	Central Bedfordshire	City of Peterborough
	Cambridgeshire county	Luton
	Essex county	Southend-on-Sea
	Hertfordshire county	Thurrock
	Norfolk county	
<b>East Midlands</b>		
	Derbyshire county	City of Derby
	Leicestershire county	City of Leicester
	Lincolnshire county	City of Nottingham
	Northamptonshire county	Rutland
	Nottinghamshire county	
<b>London</b>		
	Kingston upon Thames London borough	Enfield London borough
	Croydon London borough	Waltham Forest London borough
	Bromley London borough	Redbridge London borough
	Hounslow London borough	Sutton London borough
	Ealing London borough	Richmond upon Thames London borough
	Havering London borough	Merton London borough
	Hillingdon London borough	Wandsworth London borough
	Harrow London borough	Hammersmith and Fulham London borough
	Brent London borough	Kensington and Chelsea London borough
	Barnet London borough	City of Westminster London borough
	Lambeth London borough	Camden London borough
	Southwark London borough	Tower Hamlets London borough
	Lewisham London borough	Islington London borough
	Greenwich London borough	Hackney London borough
	Bexley London borough	Haringey London borough
	Barking and Dagenham London borough	Newham London borough
		City of London
<b>North West</b>		
	Cheshire West and Chester	Warrington
	Cheshire East	Sefton metropolitan district
	Cumbria county	Stockport metropolitan district
	Lancashire county	St. Helens metropolitan district
	Bolton metropolitan district	Tameside metropolitan district
	Bury metropolitan district	Trafford metropolitan district
	Knowsley metropolitan district	Wigan metropolitan district
	Liverpool metropolitan district	Wirral metropolitan district
	Manchester metropolitan district	Blackburn with Darwen
	Oldham metropolitan district	Blackpool
	Rochdale metropolitan district	Halton
	Salford metropolitan district	

<b>North East</b>		
	County Durham	Darlington
	Northumberland	Hartlepool
	Gateshead metropolitan district	Middlesbrough
	Newcastle upon Tyne metropolitan district	Redcar and Cleveland
	North Tyneside metropolitan district	Stockton-on-Tees
	South Tyneside metropolitan district	Sunderland metropolitan district
<b>Scotland</b>		
	Angus	West Dunbartonshire
	Clackmannanshire	West Lothian
	Dundee City	Highland
	East Ayrshire	Moray
	East Dunbartonshire	Orkney Islands
	East Renfrewshire	Na h-Eileanan an Iar
	Falkirk	Argyll and Bute
	Glasgow City	Aberdeenshire
	Inverclyde	Fife
	Midlothian	Aberdeen city
	North Lanarkshire	City of Edinburgh
	Perth and Kinross	East Lothian
	Renfrewshire	Shetland Islands
	Scottish Borders	North Ayrshire
	South Lanarkshire	Dumfries and Galloway
	Stirling	South Ayrshire
<b>South East</b>		
	Buckinghamshire county	Milton Keynes
	East Sussex county	Reading
	Hampshire county	Slough
	Kent county	The City of Brighton and Hove
	Oxfordshire county	West Berkshire
	Surrey county	Windsor and Maidenhead
	West Sussex county	Wokingham
	Bracknell Forest	Isle of Wight
	City of Southampton	City of Portsmouth
	Medway	
<b>South West</b>		
	Dorset county	Bournemouth
	Gloucestershire county	City of Bristol
	Somerset county	Poole
	Wiltshire	South Gloucestershire
	Devon county	Swindon
	Cornwall	Torbay
	Isles of Scilly	North Somerset
	Bath and North East Somerset	City of Plymouth

<b>Wales</b>		
	Abertawe – Swansea	Sir Ddinbych – Denbighshire
	Blaenau Gwent – Blaenau Gwent	Sir Fynwy – Monmouthshire
	Bro Morgannwg – the Vale of Glamorgan	Sir Gaerfyrddin – Carmarthenshire
	Caerffili – Caerphilly	Sir y Fflint – Flintshire
	Casnewydd – Newport	Tor-faen – Torfaen
	Castell-nedd Port Talbot – Neath Port Talbot	Wrecsam – Wrexham
	Conwy – Conwy	Sir Ynys Mon – Isle of Anglesey
	Merthyr Tudful – Merthyr Tydfil	Gwynedd – Gwynedd
	Pen-y-bont ar Ogwr – Bridgend	Caerdydd – Cardiff
	Powys – Powys	Sir Ceredigion – Ceredigion
	Rhondda Cynon Taf – Rhondda Cynon Taff	Sir Benfro – Pembrokeshire
<b>West Midlands</b>		
	Shropshire	Dudley metropolitan district
	Staffordshire county	Sandwell metropolitan district
	Warwickshire county	Solihull metropolitan district
	Worcestershire county	Walsall metropolitan district
	Birmingham metropolitan district	City of Stoke-on-Trent
	City of Wolverhampton metropolitan district	County of Herefordshire
	Coventry metropolitan district	Telford and Wrekin
<b>Yorkshire and the Humber</b>		
	North Yorkshire county	Sheffield metropolitan district
	Barnsley metropolitan district	Wakefield metropolitan district
	Bradford metropolitan district	City of Kingston upon Hull
	Calderdale metropolitan district	East Riding of Yorkshire
	Doncaster metropolitan district	North East Lincolnshire
	Kirklees metropolitan district	North Lincolnshire
	Leeds metropolitan district	York
	Rotherham Metropolitan District	

## Annexe C Boroughs

Previously, the reference to boroughs has not been included in the Boundary-Line product. In striving to improve the product, and at the request of the end users, the inclusion of a reference to the boroughs will enable users to search within their GIS and locate them more easily. This addition was introduced in October 2006.

These additions only apply to England and affect the districts that have been granted Charters of Incorporation (CoI), unitary authorities that have been created from previous districts with CoI and metropolitan districts that have borough status. The tables below identify where \_ (B) has been added to the file name and (B) to the boundary data. This addition does not affect the structure or specification of the product and will not impact on your GIS or translation software.

<b>Metropolitan districts (36)</b>	<b>Borough status (all Y)</b>
BARNSELY DISTRICT	Y
BIRMINGHAM DISTRICT	Y
BOLTON DISTRICT	Y
BRADFORD DISTRICT	Y
BURY DISTRICT	Y
CALDERDALE DISTRICT	Y
CITY OF WOLVERHAMPTON DISTRICT	Y
COVENTRY DISTRICT	Y
DONCASTER DISTRICT	Y
DUDLEY DISTRICT	Y
GATESHEAD DISTRICT	Y
KIRKLEES DISTRICT	Y
KNOWSLEY DISTRICT	Y
LEEDS DISTRICT	Y
LIVERPOOL DISTRICT	Y
MANCHESTER DISTRICT	Y
NEWCASTLE UPON TYNE DISTRICT	Y
NORTH TYNESIDE DISTRICT	Y
OLDHAM DISTRICT	Y
ROCHDALE DISTRICT	Y
ROTHERHAM DISTRICT	Y
SALFORD DISTRICT	Y
SANDWELL DISTRICT	Y
SEFTON DISTRICT	Y
SHEFFIELD DISTRICT	Y
SOLIHULL DISTRICT	Y
SOUTH TYNESIDE DISTRICT	Y
ST. HELENS DISTRICT	Y
STOCKPORT DISTRICT	Y
SUNDERLAND DISTRICT	Y
TAMESIDE DISTRICT	Y
TRAFFORD DISTRICT	Y
WAKEFIELD DISTRICT	Y
WALSALL DISTRICT	Y
WIGAN DISTRICT	Y
WIRRAL DISTRICT	Y

District (England)	Borough status (No)=100	District (England)	Borough status (Yes) =101
ADUR	N	ALLERDALE	Y
ARUN	N	AMBER VALLEY	Y
ASHFIELD	N	ASHFORD	Y
AYLESBURY VALE	N	BARROW-IN-FURNESS	Y
BABERGH	N	BASILDON	Y
BASSETLAW	N	BASINGSTOKE AND DEANE	Y
BLABY	N	BOSTON	Y
BOLSOVER	N	BRENTWOOD	Y
BRAINTREE	N	BROXBOURNE	Y
BRECKLAND	N	BROXTOWE	Y
BROADLAND	N	BURNLEY	Y
BROMSGROVE	N	CAMBRIDGE	Y
CANNOCK CHASE	N	CANTERBURY	Y
CHERWELL	N	CARLISLE	Y
CHICHESTER	N	CASTLE POINT	Y
CHILTERN	N	CHARNWOOD	Y
COTSWOLD	N	CHELMSFORD	Y
CRAVEN	N	CHELTENHAM	Y
DAVENTRY	N	CHESTERFIELD	Y
DERBYSHIRE DALES	N	CHORLEY	Y
DOVER	N	CHRISTCHURCH	Y
EAST CAMBRIDGESHIRE	N	COLCHESTER	Y
EAST DEVON	N	COPELAND	Y
EAST DORSET	N	CORBY	Y
EAST HAMPSHIRE	N	CRAWLEY	Y
EAST HERTFORDSHIRE	N	DACORUM	Y
EAST LINDSEY	N	DARTFORD	Y
EAST NORTHAMPTONSHIRE	N	EASTBOURNE	Y
EDEN	N	EASTLEIGH	Y
EPPING FOREST	N	EAST STAFFORDSHIRE	Y
FENLAND	N	ELMBRIDGE	Y
FOREST HEATH	N	EPSOM AND EWELL	Y
FOREST OF DEAN	N	EREWASH	Y
HAMBLETON	N	EXETER	Y
HARBOROUGH	N	FAREHAM	Y
HARLOW	N	FYLDE	Y
HART	N	GEDLING	Y
HORSHAM	N	GLOUCESTER	Y
HUNTINGDONSHIRE	N	GOSPORT	Y
LEWES	N	GRAVESHAM	Y
LICHFIELD	N	GREAT YARMOUTH	Y
MALVERN HILLS	N	GUILDFORD	Y
MANSFIELD	N	HARROGATE	Y
MENDIP	N	HASTINGS	Y
MID DEVON	N	HAVANT	Y
MID SUFFOLK	N	HERTSMERE	Y
MID SUSSEX	N	HIGH PEAK	Y

District (England)	Borough status (No)=100	District (England)	Borough status (Yes) =101
MOLE VALLEY	N	HINCKLEY AND BOSWORTH	Y
NEW FOREST	N	HYNDBURN	Y
NEWARK AND SHERWOOD	N	IPSWICH	Y
NORTH DEVON	N	KETTERING	Y
NORTH DORSET	N	KING'S LYNN AND WEST NORFOLK	Y
NORTH EAST DERBYSHIRE	N	LANCASTER	Y
NORTH HERTFORDSHIRE	N	LINCOLN	Y
NORTH KESTEVEN	N	MAIDSTONE	Y
NORTH NORFOLK	N	MALDON	Y
NORTH WEST LEICESTERSHIRE	N	MELTON	Y
PURBECK	N	NEWCASTLE-UNDER-LYME	Y
RICHMONDSHIRE	N	NORTH WARWICKSHIRE	Y
ROCHFORD	N	NORTHAMPTON	Y
ROTHER	N	NORWICH	Y
RYEDALE	N	NUNEATON AND BEDWORTH	Y
SEDGEMOOR	N	OADBY AND WIGSTON	Y
SELBY	N	OXFORD	Y
SEVENOAKS	N	PENDLE	Y
SHEPWAY	N	PRESTON	Y
SOUTH BUCKS	N	REDDITCH	Y
SOUTH CAMBRIDGESHIRE	N	REIGATE AND BANSTEAD	Y
SOUTH DERBYSHIRE	N	RIBBLE VALLEY	Y
SOUTH HAMS	N	ROSSENDALE	Y
SOUTH HOLLAND	N	RUGBY	Y
SOUTH KESTEVEN	N	RUNNYMEDE	Y
SOUTH LAKELAND	N	RUSHCLIFFE	Y
SOUTH NORFOLK	N	RUSHMOOR	Y
SOUTH NORTHAMPTONSHIRE	N	SCARBOROUGH	Y
SOUTH OXFORDSHIRE	N	SOUTH RIBBLE	Y
SOUTH SOMERSET	N	SPELTHORNE	Y
SOUTH STAFFORDSHIRE	N	ST ALBANS	Y
STAFFORDSHIRE MOORLANDS	N	ST EDMUNDSBURY	Y
STRATFORD-ON-AVON	N	STAFFORD	Y
STROUD	N	STEVENAGE	Y
SUFFOLK COASTAL	N	SURREY HEATH	Y
TANDRIDGE	N	SWALE	Y
TEIGNBRIDGE	N	TAMWORTH	Y
TENDRING	N	TAUNTON DEANE	Y
THANET	N	TEST VALLEY	Y
THREE RIVERS	N	TEWKESBURY	Y
TORRIDGE	N	TONBRIDGE AND MALLING	Y
UTTLESFORD	N	TUNBRIDGE WELLS	Y
VALE OF WHITE HORSE	N	WATFORD	Y
WARWICK	N	WAVERLEY	Y
WAVENEY	N	WELLINGBOROUGH	Y
WEALDEN	N	WELWYN HATFIELD	Y
WEST DORSET	N	WEST DEVON	Y

District (England)	Borough status (No)=100	District (England)	Borough status (Yes) =101
WEST LINDSEY	N	WEST LANCASHIRE	Y
WEST OXFORDSHIRE	N	WEYMOUTH AND PORTLAND	Y
WEST SOMERSET	N	WINCHESTER	Y
WYCHAVON	N	WOKING	Y
WYCOMBE	N	WORCESTER	Y
WYRE FOREST	N	WORTHING	Y
		WYRE	Y

Unitary (England)	Borough status (No) =15	Borough status (Yes) = 41
BATH AND NORTH EAST SOMERSET	N	
CENTRAL BEDFORDSHIRE	N	
CORNWALL	N	
COUNTY DURHAM	N	
COUNTY OF HEREFORDSHIRE	N	
EAST RIDING OF YORKSHIRE	N	
ISLE OF WIGHT	N	
ISLES OF SCILLY	N	
NORTH SOMERSET	N	
NORTHUMBERLAND	N	
RUTLAND	N	
SHROPSHIRE	N	
SOUTH GLOUCESTERSHIRE	N	
WEST BERKSHIRE	N	
WILTSHIRE	N	
BEDFORD		Y
BLACKBURN WITH DARWEN		Y
BLACKPOOL		Y
BOURNEMOUTH		Y
BRACKNELL FOREST		Y
BRIGHTON AND HOVE		Y
CHESHIRE EAST		Y
CHESHIRE WEST AND CHESTER		Y
CITY OF BRISTOL		Y
CITY OF DERBY		Y
CITY OF KINGSTON UPON HULL		Y
CITY OF LEICESTER		Y
CITY OF NOTTINGHAM		Y
CITY OF PETERBOROUGH		Y
CITY OF PLYMOUTH		Y
CITY OF PORTSMOUTH		Y
CITY OF SOUTHAMPTON		Y
CITY OF STOKE-ON-TRENT		Y
DARLINGTON		Y
HALTON		Y
HARTLEPOOL		Y
LUTON		Y

<b>Unitary (England)</b>	<b>Borough status (No) =15</b>	<b>Borough status (Yes) = 41</b>
MEDWAY		Y
MIDDLESBROUGH		Y
MILTON KEYNES		Y
NORTH EAST LINCOLNSHIRE		Y
NORTH LINCOLNSHIRE		Y
POOLE		Y
READING		Y
REDCAR AND CLEVELAND		Y
SLOUGH		Y
SOUTHEND-ON-SEA		Y
STOCKTON-ON-TEES		Y
SWINDON		Y
TELFORD AND WREKIN		Y
THURROCK		Y
TORBAY		Y
WARRINGTON		Y
WINDSOR AND MAIDENHEAD		Y
WOKINGHAM		Y
YORK		Y

## Annexe D European statistical classifications aligned to Boundary-Line

Information published by the Office for National Statistics (ONS) identifies the European classification system called NUTS (Nomenclature of Units for Territorial Statistics), this information provides a breakdown of UK regions and countries, allowing for a comparable view of economic activity across the European Union.  
<http://www.statistics.gov.uk/geography/nuts.asp>

- NUTS1 – English Government Office Regions, Wales, Scotland and Northern Ireland.
- NUTS2 – 37 areas, mainly groups of counties and unitary authorities.
- NUTS3 – 133 areas, principally individual counties and unitary authorities.

NUTS 1	NUTS 2	NUTS 3	LAU 1 areas
<b>South West</b>	Gloucestershire, Wiltshire and North Somerset	Bristol, city of  Bath and North East Somerset, North Somerset and South Gloucestershire  Gloucestershire   Swindon Wiltshire	Bristol, city of  Bath and North East Somerset North Somerset South Gloucestershire  Cheltenham Cotswold Forest of Dean Gloucester Stroud Tewkesbury  Swindon Wiltshire
	Dorset and Somerset	Bournemouth and Poole  Dorset CC   Somerset	Bournemouth Poole  Christchurch East Dorset North Dorset Purbeck West Dorset Weymouth and Portland  Mendip Sedgemoor South Somerset Taunton Deane West Somerset
	Cornwall and Isles of Scilly	Cornwall and Isles of Scilly	Cornwall Isles of Scilly
	Devon	Plymouth Torbay Devon CC	Plymouth Torbay East Devon Exeter Mid Devon North Devon South Hams Teignbridge Torridge West Devon

NUTS 1	NUTS 2	NUTS 3	LAU 1 areas
<b>South East</b>	Berkshire, Buckinghamshire and Oxfordshire	Berkshire  Milton Keynes Buckinghamshire CC  Oxfordshire	Bracknell Forest Reading Slough West Berkshire Windsor and Maidenhead Wokingham  Milton Keynes  Aylesbury Vale Chiltern South Bucks Wycombe  Cherwell Oxford South Oxfordshire Vale of White Horse West Oxfordshire
	Surrey, East and West Sussex	Brighton and Hove East Sussex CC  Surrey   West Sussex	Brighton and Hove  Eastbourne Hastings Lewes Rother Wealden  Elmbridge Epsom and Ewell Guildford Mole Valley Reigate and Banstead Runnymede Spelthorne Surrey Heath Tandridge Waverley Woking  Adur Arun Chichester Crawley Horsham Mid Sussex Worthing
	Hampshire and Isle of Wight	Portsmouth Southampton Hampshire CC   Isle of Wight Medway	Portsmouth Southampton Basingstoke and Deane East Hampshire Eastleigh Fareham Gosport Hart Havant New Forest Rushmoor Test Valley Winchester  Isle of Wight  Medway

<b>NUTS 1</b>	<b>NUTS 2</b>	<b>NUTS 3</b>	<b>LAU 1 areas</b>
	Kent	Kent CC	Ashford Canterbury Dartford Dover Gravesham Maidstone Sevenoaks Shepway Swale Thanet Tonbridge and Malling Tunbridge Wells
<b>East of England</b>	East Anglia	Peterborough  Cambridgeshire CC  Norfolk  Suffolk	Peterborough  Cambridge East Cambridgeshire Fenland Huntingdonshire South Cambridgeshire  Breckland Broadland Great Yarmouth King's Lynn and West Norfolk North Norfolk Norwich South Norfolk  Babergh Forest Heath Ipswich Mid Suffolk St. Edmundsbury Suffolk Coastal Waveney
	Bedfordshire and Hertfordshire	Luton Bedford Central Bedfordshire Hertfordshire	Luton Bedford Central Bedfordshire  Broxbourne Dacorum East Hertfordshire Hertsmere North Hertfordshire St Albans Stevenage Three Rivers Watford Welwyn Hatfield
	Essex	Southend-on-Sea Thurrock Essex CC	Southend-on-Sea Thurrock Basildon Braintree Brentwood Castle Point Chelmsford Colchester Epping Forest Harlow Maldon Rochford Tendring Uttlesford

NUTS 1	NUTS 2	NUTS 3	LAU 1 areas
East Midlands	Derbyshire and Nottinghamshire	Derby East Derbyshire  South and West Derbyshire  Nottingham North Nottinghamshire  South Nottinghamshire	Derby Bolsover Chesterfield North East Derbyshire Amber Valley Derbyshire Dales Erewash High Peak South Derbyshire Nottingham Ashfield Bassetlaw Mansfield Newark and Sherwood Broxtowe Gedling Rushcliffe
	Leicestershire, Rutland and Northamptonshire	Leicester  Leicestershire CC and Rutland  Northamptonshire	Leicester  Blaby Charnwood Harborough Hinckley and Bosworth Melton North West Leicestershire Oadby and Wigston Rutland Corby Daventry East Northamptonshire Kettering Northampton South Northamptonshire Wellingborough
	Lincolnshire	Lincolnshire	Boston East Lindsey Lincoln North Kesteven South Holland South Kesteven West Lindsey
London	Inner London	Inner London – West  Inner London – East	Camden City of London Hammersmith and Fulham Kensington and Chelsea Wandsworth Westminster  Hackney Haringey Islington Lambeth Newham Southwark Lewisham Tower Hamlets

<b>NUTS 1</b>	<b>NUTS 2</b>	<b>NUTS 3</b>	<b>LAU 1 areas</b>
	Outer London	Outer London – East and North-East  Outer London – South  Outer London – West and North-West	Barking and Dagenham Bexley Enfield Greenwich Havering Redbridge Waltham Forest  Bromley Croydon Kingston upon Thames Merton Sutton  Barnet Brent Ealing Harrow Hillingdon Hounslow Richmond upon Thames
<b>North West</b>	Cumbria	West Cumbria  East Cumbria	Allerdale Barrow-in-Furness Copeland  Carlisle Eden South Lakeland
	Cheshire	Halton and Warrington  Cheshire West and Chester Cheshire East	Halton Warrington  Cheshire West and Chester Cheshire East
	Greater Manchester	Greater Manchester South  Greater Manchester North	Manchester Salford Stockport Tameside Trafford  Bolton Bury Oldham Rochdale Wigan
	Lancashire	Blackburn with Darwen Blackpool Lancashire CC	Blackburn with Darwen  Blackpool Burnley Chorley Fylde Hyndburn Lancaster Pendle Preston Ribble Valley Rossendale South Ribble West Lancashire Wyre
	Merseyside	East Merseyside  Liverpool Sefton The Wirral	Knowsley St. Helens  Liverpool Sefton  Wirral

<b>NUTS 1</b>	<b>NUTS 2</b>	<b>NUTS 3</b>	<b>LAU 1 areas</b>
<b>North East</b>	Tees Valley and Durham	Hartlepool and Stockton-on-Tees South Teeside Darlington County Durham	Hartlepool Stockton-on-Tees Middlesbrough Redcar and Cleveland Darlington County Durham
	Northumberland and Tyne and Wear	Northumberland Tyneside Sunderland	Northumberland Gateshead Newcastle upon Tyne North Tyneside South Tyneside Sunderland
<b>Scotland</b>	Eastern Scotland	Angus and Dundee City Clackmannanshire and Fife East Lothian and Midlothian Scottish Borders Edinburgh, City of Falkirk Perth & Kinross and Stirling West Lothian	Angus Dundee City Clackmannanshire Fife East Lothian Midlothian Scottish Borders Edinburgh, City of Falkirk Perth & Kinross and Stirling West Lothian
	Highlands and Islands	Caithness & Sutherland and Ross & Cromarty Inverness & Nairn, West Moray and Badenoch & Strathspey Lochaber, Skye & Lochalsh, Arran & Cumbrae and Argyll & Bute Eilean Siar (Western Isles) Orkney Islands Shetland Islands	Caithness and Sutherland Ross and Cromarty Badenoch and Strathspey Inverness and Nairn West Moray Argyll and Bute UA Islands Argyll and the Islands LEC Mainland Arran and the Cumbraes Lochaber Skye and Lochalsh Eilean Siar (Western Isles) Orkney Islands Shetland Islands
	North Eastern Scotland	Aberdeen city, Aberdeenshire and North East Moray East Dunbartonshire, West Dunbartonshire and Helensburgh & Lomond	Aberdeen city Aberdeenshire North East Moray East Dunbartonshire Helensburgh and Lomond West Dunbartonshire
	South Western Scotland	Dumfries & Galloway East Ayrshire and North Ayrshire mainland Glasgow city Inverclyde, East Renfrewshire and Renfrewshire North Lanarkshire South Ayrshire South Lanarkshire	Dumfries & Galloway East Ayrshire North Ayrshire mainland Glasgow city East Renfrewshire Inverclyde Renfrewshire North Lanarkshire South Ayrshire South Lanarkshire

<b>NUTS 1</b>	<b>NUTS 2</b>	<b>NUTS 3</b>	<b>LAU 1 areas</b>
<b>Wales</b>	West Wales and The Valleys	Isle of Anglesey Gwynedd Conwy and Denbighshire  South West Wales  Central Valleys  Gwent Valleys  Bridgend and Neath Port Talbot Swansea	Isle of Anglesey Gwynedd Conwy Denbighshire Carmarthenshire Ceredigion Pembrokeshire Merthyr Tydfil Rhondda, Cynon Taff Blaenau Gwent Caerphilly Torfaen Bridgend Neath Port Talbot Swansea
	East Wales	Monmouthshire and Newport Cardiff and the Vale of Glamorgan Flintshire and Wrexham  Powys	Monmouthshire Newport Cardiff The Vale of Glamorgan, Flintshire Wrexham Powys
<b>West Midlands</b>	Herefordshire, Worcestershire and Warwickshire	Herefordshire, county of  Worcestershire  Warwickshire	Herefordshire, county of  Bromsgrove Malvern Hills Redditch Worcester Wychavon Wyre Forest North Warwickshire Nuneaton and Bedworth Rugby Stratford-on-Avon Warwick
	Shropshire and Staffordshire	Telford and Wrekin Shropshire Stoke-on-Trent Staffordshire CC	Telford and Wrekin Shropshire Stoke-on-Trent Cannock Chase East Staffordshire Lichfield Newcastle-under-Lyme South Staffordshire Stafford Staffordshire Moorlands Tamworth
	West Midlands	Birmingham Solihull Coventry Dudley and Sandwell  Walsall and Wolverhampton	Birmingham Solihull Coventry Dudley Sandwell Walsall Wolverhampton
<b>Yorkshire and The Humber</b>	East Yorkshire and North Lincolnshire	Kingston upon Hull, city of  East Riding of Yorkshire North and North-East Lincolnshire	Kingston upon Hull, city of  East Riding of Yorkshire North-East Lincolnshire North Lincolnshire

<b>NUTS 1</b>	<b>NUTS 2</b>	<b>NUTS 3</b>	<b>LAU 1 areas</b>
	North Yorkshire	York North Yorkshire CC	York Craven Hambleton Harrogate Richmondshire Ryedale Scarborough Selby
	South Yorkshire	Barnsley, Doncaster and Rotherham  Sheffield	Barnsley Doncaster Rotherham  Sheffield
	West Yorkshire	Bradford Leeds Calderdale, Kirklees and Wakefield	Bradford Leeds Calder Kirklees Wakefield

## **Annexe E Case studies**

### **Creating the right environment for data management: The Welsh Environmental Data Interface (WENDI)**

Agriculture, forestry and woodland account for 90% of Wales' land use, generating a wealth of insightful statistical information. The National Assembly for Wales uses this data to inform policy, assist decision-making and help deliver a wide range of services to rural communities.

### **Sharing data across the NHS<sup>®</sup> to improve patient services**

NHS North West was established under government policy to strengthen primary care trusts (PCTs) and give GPs greater ability to commission or purchase health services directly for their patients. The organisation replaced the three former strategic health authorities in Cumbria and Lancashire, Cheshire and Merseyside, and Greater Manchester. Association of Greater Manchester PCTs is taking forward a data analysis and reporting tool called the TIS Analyser, which was developed by Greater Manchester health organisations as part of the Tactical Information Service (TIS).

Read more at:

<http://www.ordnancesurvey.co.uk/oswebsite/business/markets.html>

## Annexe F Metadata

INSPIRE compliant metadata in conjunction with UK Location Programme is available to access as either:

- [XML format](#) on the main Ordnance Survey website; or
- [XML and HTML](#) format on the data.gov.uk website as Additional Links – GEMINI2 records.

## Annexe G Product and service performance report form

Ordnance Survey welcomes feedback from its customers about Boundary-Line.

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:

Boundary-Line 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.

# Boundary-Line

## Technical specification

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# Introduction

## Purpose of this specification and disclaimer

This is the technical specification (hereafter referred to as the specification) applicable to Boundary Line (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

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# Chapter 1 Product contents

## Source of Boundary-Line

The main data sources used for the creation of Boundary-Line are Ordnance Survey's 1:10 000 scale boundary record sheets and OS Landplan digital data.

## Update currency

Boundary-Line is updated twice a year, spring and autumn. The updated product is a full replacement for all the listed administrative and electoral boundaries. The represented boundaries and administrative unit names are defined and modified by Orders, Acts and Statutory Instruments (SIs). Changes that are operative from the first week of May in the current year of release will be included. Changes to Westminster constituencies that are effective from the date of the next general election will be included as separate files.

*NOTE: Orders, Acts and SIs, in exceptional circumstances due to processing or constitutional constraints, may be excluded until the next suitable release.*

## Superseded boundaries

Boundaries are no longer shown in Boundary-Line if they have been superseded at the time of the annual snapshot of boundaries that each release of Boundary-Line represents.

## Government Statistical Service (GSS) codes

Revisions to GSS codes are incorporated into Boundary-Line as soon as practicable after the information is made available to Ordnance Survey.

## Tide lines and rivers

Additional coastline reconciliation with the OS Landplan product was introduced in May 2005. Changes to the Boundary-Line tide lines, plus natural and gradual changes to rivers and streams, have been implemented alongside the previous boundary/coast association to enhance the MHW FC0071.

All boundary alignment changes in Boundary-Line will be reported in the change update document accompanying each release of Boundary-Line.

## Resolution

The resolution of the coordinate system is 0.1 m. However, it is not possible to calculate meaningful accuracy limits for Boundary-Line data, due to both the graphic nature and scale of the primary source 1:10 000 scale published mapping. Such mapping is subject to limited map generalisation, where an impression of the ground detail is made due to the complexity of the detail and importance of certain features such as roads. This means that boundary alignments are cartographically represented in areas where accurate positional representation would be impossible.

Boundary-Line is derived from the basic scale of 1:10 000. The relationship of boundaries to ground detail mirrors the accuracy achieved on the source Ordnance Survey 1:10 000 scale OS Landplan. A consequence of this is if Boundary-Line is superimposed upon boundaries in OS MasterMap<sup>®</sup> topographic data, variations in the two alignments will be seen.

## Completeness

Completeness is a measure of the correspondence between the real world and the specified data content.

During digitising, all Boundary-Line data is checked thoroughly against source documents to ensure as far as reasonably possible that no features have been omitted or misaligned.

## Boundary-Line data properties

Boundary-Line is a structured link and polygon dataset.

The data comprises three levels of features:

- 1 the administrative unit has attributes that include the administrative unit's name and GSS code. The administrative unit feature is classified by means of a feature type. It also has explicit pointers to the polygons that define its area;
- 2 the polygon includes attributes that define its area value; it also has explicit pointers to the links that chains (or makes up) its edge and may have pointers to holes within the area; and
- 3 the links have a geometry that defines their shape.

Administrative units, polygons and links are assigned unique identifiers for each release of Boundary-Line.

## Boundary-Line data structure

Real-world administrative and voting units are modelled and named and have explicit pointers to the polygons that define their area of influence.

Boundary-Line NTF data is defined geometrically as a structured link and polygon database. Linear boundary features are represented as links – a series of connected coordinated points. Chains of one or more links form explicit closed polygons.

Each NTF polygon has explicit pointers to the links that represent its boundaries.

NTF link geometry and polygon chains within the data model determine the geometric (positional) characteristics of the data.

Each real-world administrative or electoral voting unit is classified by means of an area code. The polygons are classified indirectly by the administrative or electoral voting unit collection in which they appear. These polygons within the data model also have associated attributes – these give the entities meaning, representing the geometric characteristic of an entity with items such as area or a unique identity. Boundary links are classified indirectly by the polygon chains in which they appear.

Administrative or electoral voting units, polygons and links are assigned unique identifiers for each release of Boundary-Line.

## Chapter 2 MapInfo MID/MIF

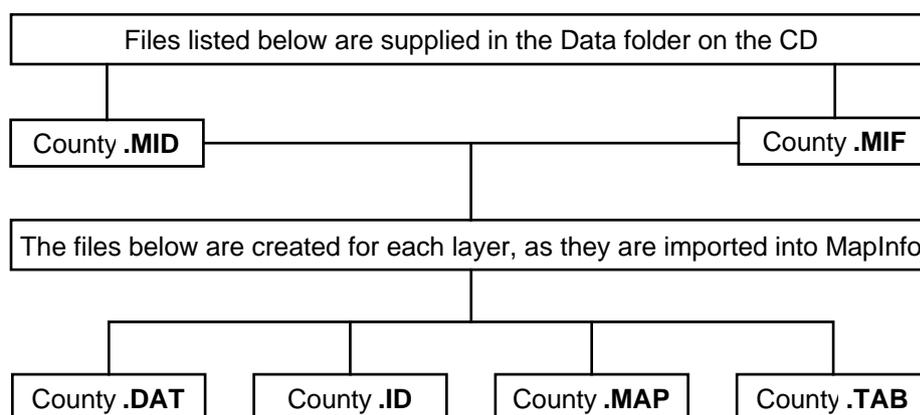
### An overview of Boundary-Line formats

#### MapInfo MID/MIF

The transfer format is as defined by the *MapInfo Professional User's Guide: MIF Export*. MapInfo Interchange Format (MIF) is an ASCII file format that can fully describe a MapInfo database. Both graphic and tabular data are exported into MIF files. The graphic data is in a file with a *.mif* extension, and the tabular data is in a file with a *.mid* extension.

MapInfo Interchange Format files can be translated into other formats with other programs.

An overview of the data structure of a Boundary-Line file in MID/MIF is shown below.



#### MapInfo TAB

TAB files (MapInfo tables) are the native format of MapInfo. They consist of a number of files with extensions such as *.DAT*, *.ID*, *.MAP* and *.TAB*. All of these files need to be present and kept together for the table to work.

### Structure of Boundary-Line in MapInfo formats

#### Area features

Area features are polygons with attributes added.

#### Link features MHW

Links represent all linear features; that is boundaries, [extent of the realm](#) and [mean high water \(springs\)](#) mark.

All links are broken when they intersect with one another.

The first and last coordinate pairs in a link correspond exactly with the end coordinates of the adjoining link(s).

Links may comprise up to several thousand line segments.

#### Coordinate system

The coordinate system is [National Grid \(NG\)](#).

The National Grid coordinates are to a resolution of 0.1 metre. This is the resolution of the source data.

## MID/MIF and TAB table structures

Title	Type	Title	Type
Name	Char (60)	Feature_Code	Char (4)
Area_Code	Char (3)	Feature_Description	Char (21)
Area_Description	Char (50)	File_Name	Char (50)
File_Name	Char (50)	Feature_Serial_Number	Integer
Feature_Serial_Number	Integer	Global_Link_ID	Integer
Collection_Serial_Number	Integer		
Global_Polygon_ID	Integer		
Admin_Unit_ID	Integer		
Census_Code	Char (9)		
Hectares	Decimal (12, 3)		
Non_Inland_Area	Decimal (12, 3)		
Area_Type_Code	Char (2)		
Area_Type_Description	Char (25)		
Non_Area_Type_Code	Char (3)		
Non_Area_Type_Description	Char (36)		

### Example of a MID file record: County

```
"Dorset County", "CTY", "County", "DORSET_COUNTY",  
12,884,122188,14362, "19", 257293.064, 3030.932, "AA", "CIVIL ADMINISTRATION  
AREA", " ", "
```

### Example of a MIF file header: County

```
Version 450  
Charset "WindowsLatin1"  
Delimiter ", "  
CoordSys Earth Projection 8, 79, "m", -2, 49, 0.9996012717, 400000, -100000  
Bounds (-7845061.1011, -15524202.1641) (8645061.1011, 4470074.53373)  
Columns 15  
Name Char(60)  
Area_Code Char(3)  
Area_Description Char(50)  
File_Name Char(50)  
Feature_Serial_Number Integer  
Collection_Serial_Number Integer  
Global_Polygon_ID Integer  
Admin_Unit_ID Integer  
Census_Code Char(9)  
Hectares Decimal(12, 3)  
Non_Inland_Area Decimal(12, 3)  
Area_Type_Code Char(2)  
Area_Type_Description Char(25)  
Non_Area_Type_Code Char(3)  
Non_Area_Type_Description Char(36)
```

*NOTE: Census Code represents the GSS codes.*

## Example of a TAB record

The screenshot shows the 'Info Tool' window with the following fields and values:

Name:	Kent County
Area_Code:	CTY
Area_Description:	County
File_Name:	KENT_COUNTY
Feature_Serial_Number:	13
Collection_Serial_Number:	1,355
Global_Polygon_ID:	122,240
Admin_Unit_ID:	18,210
Census_Code:	E10000016
Hectares:	363,943.022
Non_Inland_Area:	9,666.680
Area_Type_Code:	AA
Area_Type_Description:	CIVIL ADMINISTRATION AREA
Non_Area_Type_Code:	
Non_Area_Type_Description:	

At the bottom of the window, there are navigation buttons '<<', '>>', and 'List', and a dropdown menu showing 'county\_10\_v2'.

## Example of a MIF file header: Mean high water

```
Version 450
Charset "WindowsLatin1"
Delimiter ","
CoordSys Earth Projection 8, 79, "m", -2, 49, 0.9996012717, 400000, -100000
Bounds (-7845061.1011, -15524202.1641) (8645061.1011, 4470074.53373)
Columns 5
Feature_Code Char(4)
Feature_Description Char(5)
File_Name Char(50)
Feature_Serial_Number Integer
Global_Link_ID Integer
Data
```

## Example of a MID file record: Mean high water

```
"0071", "High", "CAMBRIDGESHIRE_COUNTY", 982, 58737
```

## Example of a TAB file record: Mean high water

The screenshot shows the 'Info Tool' window with the following fields and values:

Feature_Code:	0071
Feature_Description:	High Water Mark (HWM)
File_Name:	ORKNEY_ISLANDS
Feature_Serial_Number:	745
Global_Link_ID:	151,765

At the bottom of the window, there are navigation buttons '<<', '>>', and 'List', and a dropdown menu showing 'high\_water\_08\_01'.

## File names for layered MID/MIF and TAB

England	Scotland	Wales
County (inc GLAs)	district_borough_unitary	district_borough_unitary
county_electoral_division	district_borough_unitary_ward	european_region
district_borough_unitary	european_region	high_water
district_borough_unitary_ward	high_water	parish
european_region	parish	scotland_and_wales_const
greater_london_const	scotland_and_wales_const	scotland_and_wales_region
high_water	scotland_and_wales_region	unitary_electoral_division
parish	westminster_const	westminster_const
unitary_electoral_division		
westminster_const		

## Directory names for nested MID/MIF and TAB

### England

County  
 European\_Region  
 London Administration  
 Metropolitan\_District  
 Unitary\_Authority  
 Westminster\_Consituency

### Scotland

European\_Region  
 Scottish\_Parliamentary\_Electoral\_Region  
 Unitary\_Authority  
 Westminster Constituency

### Wales

European\_Region  
 Unitary\_Authority  
 Welsh\_Assembly\_Electoral\_Region  
 Westminster\_Constituency

*NOTE: see the user guide, chapter 3, [Relationships of administrative areas](#) for a hierarchical relationship of the boundaries contained with these files and directories.*

## Chapter 3 ESRI Shapefile

### An overview of Boundary-Line in ESRI Shapefile

ESRI Shapefiles are a simple, non-topological format for storing the geometric location and attribute information of geographic features. A Shapefile is one of the spatial data formats that you can work with in ArcGIS.

The Shapefile format defines the geometry and attributes of geographically-referenced features in as many as five files with specific file extensions that should be stored in the same project workspace. They are:

**.shp** – the file that stores the feature geometry.

**.shx** – the file that stores the index of the feature geometry.

**.dbf** – the dBASE file that stores the attribute information of features. When a Shapefile is added as a theme to a view, this file is displayed as a feature table.

**.sbn** and **.sbx** – the files that store the spatial index of the features. These two files will only exist if you perform theme-on-theme selection, spatial joins, or create an index on a theme's SHAPE field.

**.prj** – the file that stores the projection information.

### Structure of Boundary-Line in Shapefile

#### Area features

Area features are polygons with attributes added.

#### Link features MHW

Links represent all linear features; that is boundaries, [extent of the realm](#) and [mean high water \(springs\)](#) mark.

All links are broken when they intersect with one another.

The first and last coordinate pairs in a link correspond exactly with the end coordinates of the adjoining link(s).

Links may comprise up to several thousand line segments.

#### Coordinate system

The coordinate system is [National Grid](#) (NG). The National Grid coordinates are to a resolution of 0.1 metre. This is the resolution of the source data.

## Shapefile table structures

Regions		Polylines	
Title	Type	Title	Type
FID*	Object ID	FID*	Object ID
SHAPE*	Geometry	SHAPE*	Geometry
NAME	Text	CODE	Text
AREA_CODE	Text	DESCRIPTO	Text
DESCRIPTO	Text	FILE_NAME	Text
FILE_NAME	Text	NUMBER	Double
NUMBER	Double	LINK_ID	Double
NUMBER0	Double		
POLYGON_ID	Double		
UNIT_ID	Double		
CODE	Text		
HECTARES	Double		
AREA	Double		
TYPE_CODE	Text		
DESCRIPT0	Text		
TYPE_COD0	Text		
DESCRIPT1	Text		

*NOTE: \*these fields are not in the data as they are virtual columns created by ArcGIS when accessing the table contents. The FID column uniquely identifies each object stored in the table. The SHAPE column provides information about the feature geometry.*

### Example field record for Shapefile: County

FID*	14
SHAPE*	Polygon
NAME	Lancashire County
AREA_CODE	CTY
DESCRIPTO	County
FILE_NAME	LANCASHIRE_COUNTY
NUMBER	32
NUMBER0	1139
POLYGON_ID	121912
UNIT_ID	5156
CODE	E10000017
HECTARES	308341.05
AREA	17906.126
TYPE_CODE	AA
DESCRIPT0	CIVIL ADMINISTRATION AREA
TYPE_COD0	
DESCRIPT1	

FID*	0
SHAPE*	Polygon
NAME	Buckinghamshire
AREA_CODE	CTY
DESCRIPTO	County
FILE_NAME	BUCKINGHAMSHIRE
NUMBER	14
NUMBER0	648
POLYGON-ID	51776
UNIT_ID	11901
CODE	E10000002
HECTARES	156493
AREA	0
TYPE_CODE	AA
DESCRIPT0	CIVIL ADMINISTRATION AREA
TYPE_COD0	
DESCRIPT1	

### Example field record for Shapefile: Mean high water

FID*	2855
SHAPE*	Polyline
CODE	0071
DESCRIPTO	High
FILE_NAME	HAMPSHIRE_COUNTY
NUMBER	1607
LINK_ID	75762

NOTE: \*these fields are not in the data as they are virtual columns created by ArcGIS when accessing the table contents. The FID column uniquely identifies each object stored in the table. The SHAPE column provides information about the feature geometry.

### File names for layered Shapefile

England	Scotland	Wales
County_region (Inc GLAs)	district_borough_unitary_region	district_borough_unitary_region
county_electoral_division_region	district_borough_unitary_ward_region	europaean_region_region
district_borough_unitary_region	europaean_region_region	high_water_polyline
district_borough_unitary_ward-region	high_water_polyline	parish_region
europaean_region-region	parish_region	scotland_and_wales_const_region
greater_london_const_region	scotland_and_wales_const_region	scotland_and_wales_region_region
high_water_polyline	scotland_and_wales_region_region	unitary_electoral_division_region
parish_region	westminster_const_region	westminster_const_region
unitary_electoral_division_region		
westminster_const_region		

### Directory names for nested Shapefile

England	Scotland	Wales
County	European_Region	European_Region
European_Region	Scottish_Parliamentary_Electoral_Region	Unitary_Authority
London Administration	Unitary_Authority	Welsh_Assembly_Electoral_Region
Metropolitan_District	Westminster_Constituency	Westminster_Constituency
Unitary_Authority		
Westminster_Constituency		

See chapter 3, [Relationships of administrative areas](#) for a hierarchical relationship of the boundaries contained with these files and directories.

## Chapter 4 NTF explained

For convenience, BS 7567 (National Transfer Format v2.0) level 3 is referred to as NTF.

The purpose of this chapter is to:

- provide a brief description of the presentation of Boundary-Line in the NTF transfer format; and
- provide details to enable Boundary-Line files in NTF to be understood and processed in GIS application software.

The term *data structure* refers to the organisation and sequence of the records in the data file and not to the geographical topology of the data.

### An overview of Boundary-Line in NTF

Boundary-Line data is supplied in the British Standard national format, namely NTF, and is transferred in level 3 as variable-length records.

The British Standard for NTF stipulates the following for level 3:

This level supports a variety of data models that may include network data, polygons, semantic relationships and complex features.

This level is designed for:

- transferring basic geometry and simple features through the use of geometry and feature records;
- relating basic geometrical and topological elements to one or more features through the use of chain records;
- combining features to form complex features through the use of collection and complex polygon records;
- using text records both to relate text strings to features and cartographic output; and
- referencing and positioning external features, for example, raster data; the record structure at this level may also be defined to be compatible with data in levels 1 and 2.

The governing body for the industry standard NTF is the British Standards Institution (BSI). Their address is:

British Standards Institution  
389 Chiswick High Road  
LONDON  
W4 4AL

Phone: +44 (0) 20 8996 9001

Fax: +44 (0) 20 8996 7001

*NOTE: full details of the British Standard can be accessed through the British Standards Institution's website at: [www.bsi-global.com](http://www.bsi-global.com).*

### Conventions used in this technical specification

Certain conventions are adopted as an aid to interpretation. In some cases the convention is dropped where the context is self-evident.

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

## Version management

### Product version

Each version of Boundary-Line is defined by a unique product specification. The product specification can be found in Boundary-Line data in the {FCNAME} field of the Database Header Record [DBHREC]. This technical sheet reflects the product specifications current at the time of its production, which are as follows:

Product: **Boundary-Line**  
Product specification: **A20N\_FC**  
Product version date: **October 2013**  
Product version: **BL2013 v2**

The {FCDATE} field of the [Database Header Record](#) [DBHREC] indicates the effective date of this product specification.

### Product release

Boundary-Line updates are released twice a year, spring and autumn. The updates represent boundaries (as defined and modified by Orders, Acts and Statutory Instruments) as at a date that falls, typically, during the first week of the preceding May. This date appears in each [Section Header Record](#) [SECHREC] in the {SURV\_DATE} field.

The copyright date of each release is the same as the {SURV\_DATE} and is shown in each Section Header Record [SECHREC] in the {COPYRIGHT} field.

### NTF version

The current version is NTF v2.0 Level 3 and will be supplied until further notice. The {NTFVER} field of the [Volume Header Record](#) [VOLHDREC] indicates the NTF version. The effective date of the definition of NTF v2.0 in Boundary Line is 15 May 1992 and is indicated by the {DDATE} field of the [Database Header Record](#) [DBHREC].

## Specific Boundary-Line NTF information

### Area measurement

Area measurements are delivered for each polygon and complex polygon in each file and include the foreshore and tidal water. They are quoted to a precision of 0.001 hectares, which is the current DCLG specification. The accuracy of the measurement is dependent upon the source data used (see [Resolution](#)).

### Coordinates

Coordinate values and the number of coordinate pairs in a feature are transferred in the [Geometry Record](#) [GEOMETRY1].

All coordinates are expressed as strings of eight numeric characters for the eastings and eight numeric characters for the northings. Where appropriate, leading zeros are present to complete the eight characters.

All coordinates are full National Grid coordinates measured from the National Grid origin.

### Link features

Links represent all linear features; that is boundaries, [extent of the realm](#) and [mean high water \(springs\)](#) mark.

Link features are transferred in the [Geometry Record](#) [GEOMETRY1].

All links are broken when they intersect with one another.

The first and last coordinate pairs in a link correspond exactly with the end coordinates of the adjoining link(s).

Links may comprise up to several thousand line segments.

## Names

The distinctive name of an administrative area is conveyed by way of the NM attribute of the Collection of Features record. Punctuation is shown in names but not accentuation, for example, the name Westward Ho! Ward includes the exclamation mark, but Ynys Môn is shown as Ynys Mon. Each administrative area also carries a unique identifier known as the [Admin area identifier](#) or AI. The same AI attribute is attached to every component forming part of an administrative area, for example, MILTON CP and MILTON CP (Det No1).

## Government Statistical Service (GSS) codes

See chapter 3 of the user guide, [Boundary-Line explained](#). The GSS codes are conveyed in the [OP attribute](#) of the [Collection of Features Record](#) [COLLECT].

## Record size

NTF data is written to the media in variable length records, with a maximum record length of 80 characters, which includes any continuation mark {CONT\_MARK} and end of record {EOR} (which should not be confused with EOR, meaning extent of the realm).

## Record terminator {EOR}

The end-of-record terminator is the percent character (%) (ASCII code 37) for both formatted and unformatted media.

## Other features

Each polygon carries the following attributes:

- PI polygon ID, a number unique to the polygon, for example, 070087; and
- HA area of polygon, recorded to a precision of 0.001 hectare.

Each link carries the following attributes where relevant:

- LK link ID, a number unique to the link, for example, 0000064368; and
- FC selected links carry feature code 0071 for MHW.

Each administrative area (collection of polygon features) carries the following attributes where relevant:

- AI administrative unit ID – a number unique to the administrative unit, for example, 024431;
- NM distinctive name of administrative unit – for example, Hampshire County;
- OP GSS code (provided by the Office of National Statistics (England and Wales) and the General Register Office for Scotland) for all units with exception of Greater London Authority, county electoral divisions and non-civil-parish areas (see [chapter 3 Boundary-Line explained](#) for a full explanation);
- TY the type of the non-area – for example, VA meaning voting area.
- AC code indicating the type of area, for example, CPC meaning civil parish or community;
- NB selected areas have this code to indicate a non-area is coincident with this area;
- NA coastal areas carry the area of non-land that constitutes this area

## Unique identifiers for administrative unit

### ADMIN\_AREA\_ID (AI)

Each administrative unit carries a unique identifier (AI). The same AI attribute is associated with every component polygon forming part of an administrative unit, irrespective of the number of polygons.

The same AI attribute is also associated with every component administration forming part of an administrative unit, even if the administration carries different name attributes (NM), for example, MILTON CP and MILTON CP (Det No 1).

### GLOBAL\_LINK\_ID (LK)

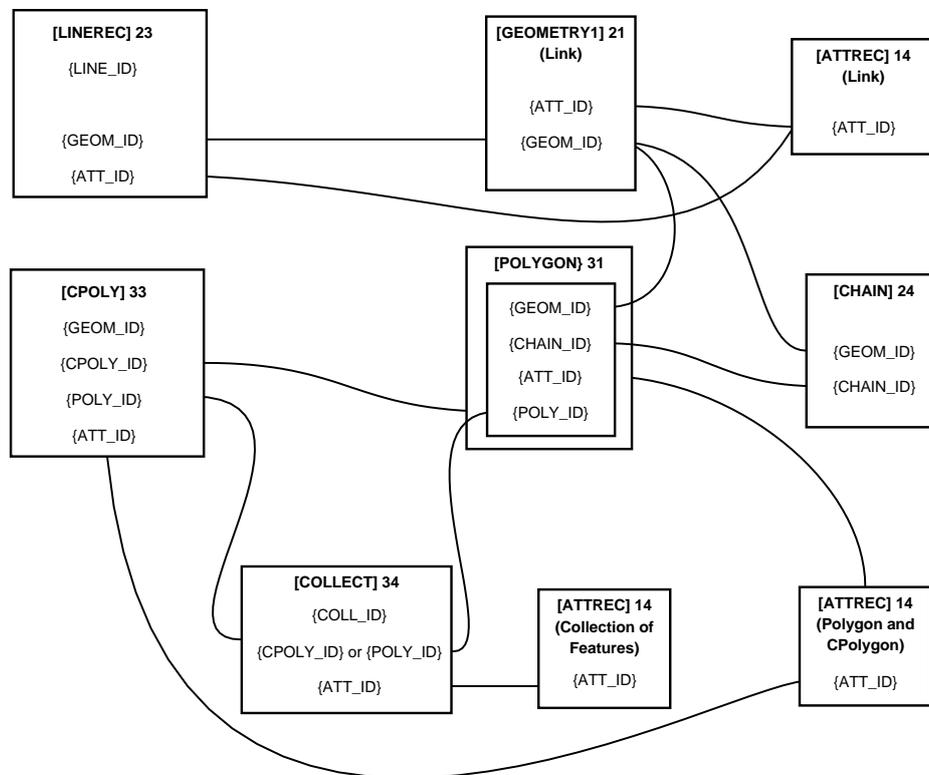
Each link carries a unique identifier (LK).

## GLOBAL\_POLYGON\_ID (PI)

Each polygon carries a unique identifier (PI).

### Relationships between record IDs

Figure 5.1: relationships between record IDs



### Additional relationships between record IDs

The same ID number is used wherever there is a one-to-one relationship between different types of records. Thus:

{COLL\_ID}={ATT\_ID} (for collection of features)

The {COLL\_ID} is found in the [Collection of Features Record](#).

The {ATT\_ID} is found in the [Attribute Record](#) (for collection of features).

{CPOLY\_ID}={ATT\_ID} (for complex polygon)

The {CPOLY\_ID} is found in the [Complex Polygon Record](#) and the [Collection of Features Record](#).

The {ATT\_ID} is found in the [Attribute Record](#) (for CPOLY).

{POLY\_ID}={CHAIN\_ID}={ATT\_ID} (for polygon)

The {POLY\_ID} is found in the [Polygon Record](#) and the [Collection of Features Record](#).

The {CHAIN\_ID} is found in the [Polygon Record](#).

The {ATT\_ID} is found in the [Attribute Record](#) (for polygon).

{LINE\_ID}={GEOM\_ID}={ATT\_ID} (for links)

The {LINE\_ID} is found in the [Line Record](#).

The {GEOM\_ID} is found in the [Geometry Record](#) and the [Chain Record](#).

The {ATT\_ID} is found in the [Attribute Record](#) (for link).

### Tidal and other coastal information

See also [mean high water \(springs\)](#) and [mean low water \(springs\)](#) in chapter 3 of the Boundary-Line user guide.

EOR: the external bounding line of the Boundary-Line dataset is the extent of the realm.

*NOTE: to display the EOR, both mean high water (MHW) and another type of boundary, for example, European electoral region or Westminster constituency, need to be displayed together.*

MHW: mean high water (springs) mark is shown as continuous lines within each delivered dataset. The lines do not interact with the administrative area lines. Mean high water (springs) mark is represented in Boundary-Line by a continuous link feature with feature code 0071. Mean low water (springs) mark is not shown, although it is generally coincident with the EOR.

The area of non-inland is referenced within each administrative unit using the NA attribute.

## Complex polygons

Administrative units wholly surrounding others of the same type are examples of polygons with holes in them. These are known as complex polygons.

The [Complex Polygon Records](#) [CPOLY] establish the connection between the single containing polygon, and the contained polygons.

The Complex Polygon Record [CPOLY] is referenced by the [Collection of Features Record](#) [COLLECT] for the administrative area of which they are part. They also have an [Attribute Record](#) [ATTREC] (for [polygon](#) and [collection of features](#)) and a [Geometry Record](#) [GEOMETRY1] (for polygons).

The polygons associated with a Complex Polygon Record [CPOLY] do not have any geometry or attributes, but the containing polygon is held explicitly.

## Data classification and metadata

### Attribute codes

Attribute codes provide supplementary information on a feature, providing such qualifying information as feature code, feature name, and so on. See also [Other attributes](#) in chapter 2, Overview of Boundary-Line of the user guide.

The structure of the attributes is described in the [Attribute Description Record](#) [ATTDESC]. The [Attribute Record](#) [ATTREC] holds the attribute detail of a record.

The following attributes are used in the supply of Boundary-Line data:

Mnemonic	Name	Description
AI	<a href="#">ADMIN_AREA_ID</a>	Unique identifier for administrative unit.
AC	<a href="#">AREA_CODE</a>	Coded value for the area.
FC	<a href="#">FEAT_CODE</a>	Feature code for selected links.
HA	<a href="#">HECTARES</a>	Area of polygon within file.
LK	<a href="#">GLOBAL_LINK_ID</a>	Unique identifier for a link.
NA	<a href="#">NON_INLAND_AREA</a>	Area of non-inland within an administrative area.
NM	<a href="#">NAME</a>	Distinctive name of administrative unit.
NB	<a href="#">NON_TYPE_CODE</a>	Coded value of matching non-area.
OP	<a href="#">CENSUS_CODE</a>	GSS code allocated by ONS or GROS to administrative unit.
PI	<a href="#">GLOBAL_POLYGON_ID</a>	Unique identifier for a polygon.
TY	<a href="#">AREA_TYPE</a>	Value indicating the type of administrative unit or area.

#### AI ADMIN\_AREA\_ID

This attribute is conveyed in the [Attribute Record for collection of features](#) and is a unique identifier for each administrative unit. Each AI attribute is unique to the entire Boundary-Line dataset.

#### AC AREA\_CODE

A code allocated by Ordnance Survey to indicate the administrative or voting area type. This is allocated to all administrative or voting areas. The current values are given below and also include codes for future areas.

*NOTE: this list should be treated as dynamic, as other types of boundaries may be added in the future.*

Name	Code
Civil parish or community	CPC
County	CTY
County electoral division	CED

District	DIS
District ward	DIW
European region	EUR
Greater London Authority	GLA
Greater London Authority Assembly constituency	LAC
London borough	LBO
London borough ward	LBW
Metropolitan county	MTC
Metropolitan district	MTD
Metropolitan district ward	MTW
Nation	NAT
Non-civil parish or community	NCP
Realm	RLM
Scottish Parliament constituency	SPC
Scottish Parliament electoral region	SPE
Sea	SEA
Unitary authority	UTA
Unitary authority ward	UTW
Unitary authority electoral division	UTE
Welsh Assembly constituency	WAC
Welsh Assembly electoral region	WAE
Westminster constituency	WMC

## FC FEAT\_CODE

The use of feature codes is reduced significantly. With this specification, they will only be used to define non-standard link features. The mean high water tide lines will have the code 0071. The CD/TY attributes together with the [\[COLLECT\]](#) list will take over from the polygon seed feature codes. The boundary links will have implied codes through their roles in the various polygon [\[CHAIN\]](#) records.

## HA HECTARES

The area of the polygon quoted to a precision of 0.001 hectares, but subject to the source data accuracies. See [Resolution](#).

## LK GLOBAL\_LINK\_ID

A unique identifier for each link. Each LK attribute is unique to the entire Boundary-Line dataset.

## NA NON\_INLAND\_AREA

The area of the administrative unit that is currently defined as non-inland. This will include foreshore and tidal water. The value is quoted to a precision of 0.001 hectares.

## NM NAME

This attribute is conveyed in the Attribute record for collection of features and contains the distinctive name of the administrative unit, for example LISS CP. The name will always include the type of the area in the text string, for example, HAMPSHIRE COUNTY rather than HAMPSHIRE. Exception to this rule include *County Durham*, which is a unitary authority. The addition of – (B) at the end of the NAME is to identify the presence of boroughs without affecting the data structure.

## NB NON\_TYPE\_CODE

A code allocated by Ordnance Survey to indicate the non-administrative or non-voting area type that is defined by the corresponding administrative or voting area's polygon. The current values are as follows:

Name	Code
Civil parish or community	CPC
County	CTY
County electoral division	CED
Unitary authority electoral division	UTE
Unitary authority ward	UTW

## OP CENSUS\_CODE

This attribute is conveyed in the Attribute record for the collection of features and provides the GSS code allocated by ONS or GROS to the administrative unit. See [chapter 3, Boundary-Line explained](#) in the user guide for details of the structure and meaning of the codes. Where the code is unavailable to Ordnance Survey, the attribute value is set to 999999999.

## PI GLOBAL\_POLYGON\_ID

A unique identifier for every polygon. Each PI attribute is unique to the entire Boundary-Line dataset.

## TY AREA\_TYPE

A code allocated by Ordnance Survey to indicate the type of area. The current values are as follows:

Name	Type	Description
Civil administrative area	AA	Applied to the set of administrations for civil organisation.
Civil voting area	VA	The set of voting areas for civil administrations.
Filler area	FA	
Topographic area	TA	
Judicial area	JA	

## Explicit administration and/or voting area relationships

The [\[COLLECT\]](#) record has been expanded to show the relationships between administrations and the administrations voting areas explicitly. The rules applied are as follows:

- For each county named in the file, the following will appear in the [\[COLLECT\]](#) record:  
{COLL\_ID} to its related districts; and  
{COLL\_ID} to its related county EDs.
- For each district named in the file, the following will appear in the [\[COLLECT\]](#) record:  
{COLL\_ID} to its related district wards;  
{COLL\_ID} to its related civil parishes or communities (where present); and  
{COLL\_ID} to its related non-civil parishes (where present).
- For each unitary authority named in the file, the following will appear in the [\[COLLECT\]](#) record:  
{COLL\_ID} to its related unitary authority wards or unitary authority EDs;  
{COLL\_ID} to its related civil parishes or communities (where present); and  
{COLL\_ID} to its related non-civil parishes or communities (where present).
- For each metropolitan district named in the file, the following will appear in the [\[COLLECT\]](#) record:  
{COLL\_ID} to its related metropolitan district wards;  
{COLL\_ID} to its related civil parishes (where present); and  
{COLL\_ID} to its related non-civil parishes (where present).
- For the Greater London Authority, the following will appear in the [\[COLLECT\]](#) record:  
{COLL\_ID} to all the Greater London Authority Assembly constituencies; and  
{COLL\_ID} to all the London boroughs (including the City and county of London).
- For each London borough named in the file, the following will appear in the [\[COLLECT\]](#) record:  
{COLL\_ID} to its related London borough wards.
- For each Scottish parliamentary electoral region named in the file, the following will appear in [\[COLLECT\]](#):  
{COLL\_ID} to its related Scottish parliamentary constituencies.
- For each Welsh Assembly electoral region named in the file, the following will appear in the [\[COLLECT\]](#) record:  
{COLL\_ID} to its related Welsh Assembly constituencies.

- For each European region named in the file, the following will appear in the [COLLECT] record:  
None – there is currently no administrative voting level below European region.
- For each Westminster constituency named in the file, the following will appear in the [COLLECT] record:  
None – there is currently no administrative voting level below Westminster constituency.

## Transfer set structure

Boundary-Line data is in one or more transfer sets.

A transfer set equates to a single file.

## Volume records

Each transfer set starts with a [Volume Header Record](#) [VOLHDREC] and terminates with a [Volume Termination Record](#) [VOLTERM].

## Database records

The beginning of each transfer set is structured with the following introductory, or leading, records:

- 1 [Database Header Record](#) [DBHREC], which gives details of:
  - the database name;
  - NTF release date;
  - feature classification table name; and
  - the release date which applies to the whole of the transfer set.
- 2 [Attribute Description Record](#) [ATTDESC], which lists and gives a description of the attributes that can be applied to features within the transfer set.
- 3 [Feature Classification Record](#) [FEATCLASS], which gives the MHW feature code.
- 4 [Code List Record](#) [CODELIST], which lists and describes the coded values that appear in the attribute records AC, NB and TY.

These introductory records are followed by the data.

## Section records

The section consists of two parts:

- 1 [Section Header Record](#) [SECHREC] – this gives the National Grid coordinates of the section; and
- 2 Section body – this comprises all the features within the section.

## Section body data

### Line feature

Each line feature is represented by the use of the following records:

- [Line Record](#) [LINE\_REC];
- [Geometry Record](#) [GEOMETRY1]; and
- [Attribute Record](#) [ATTREC].

### Chain feature

Each chain feature is represented by the use of the following records:

- [Chain Record](#) [CHAIN];
- [Geometry Record](#) [GEOMETRY1]; and
- [Attribute Record](#) [ATTREC].

Each chain feature is in the data only once. One-to-many geometry records represent one chain record. There is one attribute record to each geometry record.

## Polygon feature

Each polygon feature is represented by the use of the following records:

- [Polygon Record](#) [POLYGON];
- [Chain Record](#) [CHAIN]; and
- [Attribute Record](#) [ATTREC].

Each polygon feature is in the data only once. One polygon record represents one chain record. There is one attribute record to each polygon record.

*NOTE: if the polygon record is part of a complex polygon record, then the polygon record does not reference an attribute record.*

## Complex polygon feature

Each complex polygon feature is depicted by the use of the following records:

- [Complex Polygon Record](#) [CPOLY];
- [Polygon Record](#) [POLYGON]; and
- [Attribute Record](#) [ATTREC].

Each complex polygon feature is in the data only once. More than one polygon record is required for each complex polygon record. There is one attribute record to each complex polygon record.

## Collection of features

Each collection of features is depicted by the use of the following records:

- [Collect Record](#) [COLLECT];
- [Polygon Record](#) (either and) [POLYGON];
- [Complex Polygon Record](#) (either) [CPOLY];
- [Collect Record](#) (optional) [COLLECT]; and
- [Attribute Record](#) [ATTREC].

The collection of features must have at least one polygon record or complex polygon record.

A collect record is a combination of zero-to-many polygon records and/or zero-to-many complex polygon records and zero-to-many collect records. There is one attribute record to each collect record.

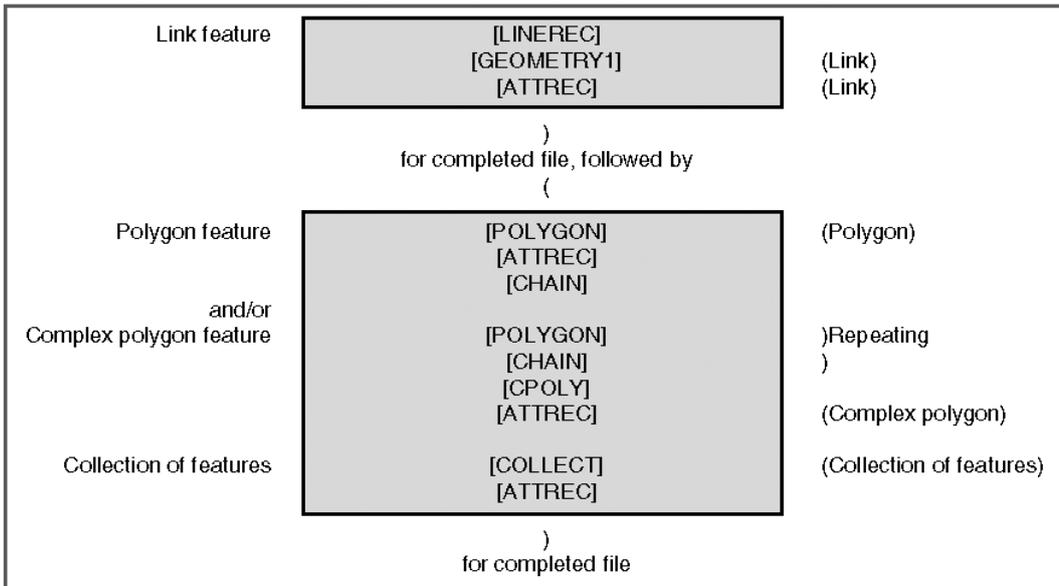
## Section body records

[Geometry Record](#) [GEOMETRY1] contains the coordinate position(s), to 0.1 m of the feature. Line features contain two-to-many pairs.

Geometry continuation records contain any further coordinates required to complete a line feature.

## How the section body data is arranged

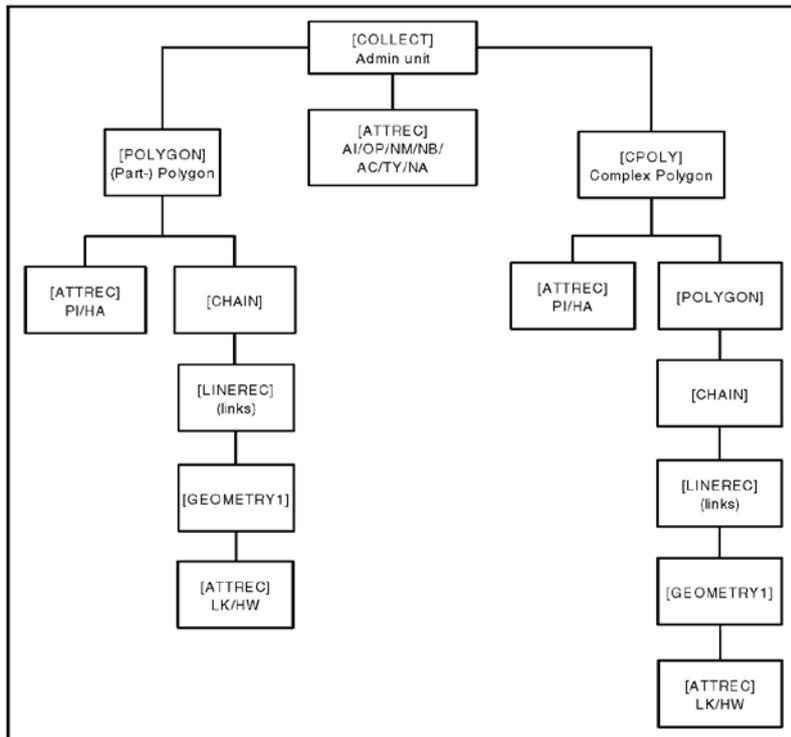
*NOTE: NTF is designed to transfer any geographic data, therefore there is no standard order of records. This description of the order of records is specifically for the transfer of Boundary-Line data.*



## Section body record structure

Complex polygon records are included only to deal with polygons with holes, as described elsewhere. Otherwise, all records are compulsory for all transfers.

Figure 5.2: hierarchy of records



## Data supply structure

### Supply of data on formatted media

Boundary-Line data is not blocked but is written directly to the output device.

The transfer set has one dataset and one section. One or more transfer sets are put onto the medium.

01	VOLUME HEADER RECORD	01
02	DATABASE HEADER RECORD	
40	ATTRIBUTE DESCRIPTION RECORD	

05	FEATURE CLASSIFICATION RECORD	
07	SECTION HEADER RECORD	
	File 1 data	
99	VOLUME TERMINATION RECORD	*
01	VOLUME HEADER RECORD	01
02	DATABASE HEADER RECORD	
40	ATTRIBUTE DESCRIPTION RECORD	
05	FEATURE CLASSIFICATION RECORD	
07	SECTION HEADER RECORD	
	File 2 data	
99	VOLUME TERMINATION RECORD	*
	and so on	
	File n data	
99	VOLUME TERMINATION RECORD	*

\*'99End Of Transfer Set0%'

## Chapter 5 Record structures for the transfer of Boundary-Line in NTF

### NTF record list

This list comprises the valid record types used in the Boundary-Line NTF transfer set.

Descriptor	Description	Record name
01	<a href="#">Volume Header Record</a> – defines the donor and data type	[VOLHDREC]
02	<a href="#">Database Header Record</a> – transfers data about the database	[DBHREC]
05	<a href="#">Feature Classification Record</a> – defines data classifications	[FEATCLASS]
07	<a href="#">Section Header Record</a> – coordinate and structure types, unit, scale factors and so on	[SECHREC]
14	<a href="#">Attribute Record</a> – defines the attributes for link, name and polygon records	[ATTREC]
21	<a href="#">Two-dimensional Geometry Record</a> – defines the two-dimensional geometry for a link	[GEOMETRY1]
23	<a href="#">Line Record</a> – defines all of the line information. This is included for compatibility with other products	[LINEREC]
24	<a href="#">Chain Record</a> – data about links forming polygons	[CHAIN]
31	<a href="#">Polygon Record</a> – data about polygons	[POLYGON]
33	<a href="#">Complex Polygon Record</a> – data about complex polygons	[CPOLY]
34	<a href="#">Collection of Features Record</a> – data on how polygons and collections are associated	[COLLECT]
40	<a href="#">Attribute Description Record</a> – defines attribute descriptions and their fields	[ATTDESC]
42	<a href="#">Code List Record</a> – describes the coded values that appear in attribute fields	[CODELIST]
99	<a href="#">Volume Termination Record</a> – defines the end of the transfer set	[VOLTERM]

[Complex Polygon Record](#) [CPOLY] is only included to deal with polygons with holes, as described in chapter 2 of the user guide, [Overview of Boundary-Line](#), otherwise, all records are compulsory for all transfers.

## Volume Header Record [VOLHDREC] 01

Field	Position	Format	Content	Description
REC_DESC	01:02	A2	01	Record descriptor
DONOR	03:22	A20	ORDNANCE SURVEY<5S>	Supplier
RECIPIENT	23:42	A20	<20S>	Not used
TRANDATE	43:50	D8	20040219	Date of creation of the transfer set
SERIAL	51:54	I4	0000	Not used
VOLNUM	55:56	I2	See note 1 below	Volume sequential number
NTFLEVEL	57:57	I1	3	NTF level 3
NTFVER	58:61	R4,2	0200	NTF version 2.0
NTFOR	62:62	A1	V	Variable length records
EOR	63:63	A1	%	Character used for EOR on unformatted media
			or <S>	If default, then EOR is % for formatted media
DIVIDER	64:64	A1	\	Divider used to terminate variable length text fields
CONT_MARK	65:65	I1	0	No further records
EOR	66:66	A1	%	Record terminator

### Record example:

01ORDNANCE SURVEY 2004021900000130200V \0%

....	....1....	....2....	....3....	....4....	....5....	....6....	....7....	....8
123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890								
....	....	....	....	....	....	....	....	....

Template

NOTE 1: {VOLNUM} is 01 for the first volume and is incremented for subsequent volumes.



## Feature Classification Record [FEATCLASS] 05

Field	Position	Format	Content	Description
REC_DESC	01:02	A2	05	Record descriptor
FEAT_CODE	03:06	I4	0071	Feature code for MHW
CODE_COM	07:16	A10	<10S>	Not used
STCLASS	17:36	A20	<20S>	Not used
FEATDES	*:*	A*	High Water Mark (HWM)	For MHW
DIVIDER	*:*	A1	\	Divider used to terminate variable length fields
CONT_MARK	*:*	I1	0	No further records
EOR	*:*	A1	%	Record terminator

\* = variable integer

### Record example:

```
050071                               High Water Mark (HWM)\0%
.....1.....|.....2.....|.....3.....|.....4.....|.....5.....|.....6.....|.....7.....|.....8
12345678901234567890123456789012345678901234567890123456789012345678901234567890
.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|
                                         Template
```

## Section Header Record [SECHREC] 07

Field	Position	Format	Content	Description
REC_DESC	01:02	A2	07	Record descriptor
SECT_REF	03:12	A10	Admin name	Unique identifier of the main administration
COORD_TYP	13:13	I1	2	Defines rectangular coordinates, followed by spaces
STRUC_TYP	14:14	I1	1	Defines vector data
XYLEN	15:19	I5	00008	Refines {X_COORD} and {Y_COORD} to 8 digits
XY_UNIT	20:20	I1	2	Defines units as metres
XY_MULT	21:30	R10.3	000000100	Multiplies coordinates by 0.100
ZLEN	31:35	I5	00000	Not used
Z_UNIT	36:36	I1	0	Not used
Z_MULT	37:46	R10.3	0000001000	Multiplies coordinates by 0.100
X_ORIG	47:56	I10	Coordinates	Eastings of file origin (always 0)
Y_ORIG	57:66	I10	Coordinates	Northings of file origin (always 0)
Z DATUM	67:76	I10	0000000000	Not used
CONT_MARK	77:77	I1	1	Continuation record follows
EOR	78:78	A1	%	Record terminator

NOTE 1: the {SECT\_REF} field will comprise the first 10 characters of the main administration.



## Attribute Record [ATTREC] 14 for Line Record [LINEREC] 23

Field	Position	Format	Content	Description
REC_DESC	01:02	A2	14	Record descriptor
ATT_ID	03:08	I6	Variable number	Unique ID in file. Cross reference to {ATT_ID} in Geometry record
VAL_TYPE	09:10	A2	LK	Mnemonic for <a href="#">GLOBAL_LINK_ID</a> attribute
VALUE	11:20	I10	See note 1	Unique identifier for link
VAL_TYPE	21:22	A2	FC (see note 3 below)	Mnemonic for FEAT_CODE attribute (optional)
VALUE	23:26	I4	See notes 2 and 3 below	Feature code (optional)
CONT_MARK	27:27	11	0	No further records
EOR	28:28	A1	%	Record terminator

### Record example:

```
14800044LK0000000000FC00710%
14800045LK00001509600%
```

....	....1....	....2....	....3....	....4....	....5....	....6....	....7....	....8
1234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890								
....	....	....	....	....	....	....	....	....

Template

NOTE 1: valid {VALUE} for LK range is 0000040000 to 9999999999.

NOTE 2: valid {VALUE} for FC range is 0071.

NOTE 3: where optional fields are not present, {CONT\_MARK} and {EOR} fields will be in positions 21 and 22.

## Attribute Record [ATTREC] 14 for Collection of Features Record [COLLECT] 34

\*= variable integer.

### Record examples:

Field	Position	Format	Content	Description
REC_DESC	01:02	A2	14	Record descriptor
ATT_ID	03:08	I6	Variable number	Unique in file. Cross reference to {ATT_ID} in <a href="#">Collect Record</a>
VAL_TYPE	09:10	A2	AI	Mnemonic for ADMIN_AREA_ID attribute
VALUE	11:16	I6	See <a href="#">note 1</a> below	Unique in dataset number that is the Admin area ID; 000000 for non-areas
VAL_TYPE	17:18	A2	NA	Mnemonic for NON_INLAND_AREA
VALUE	19:30	R12,3	Variable number	Area of non-land
VAL_TYPE	31:32	A2	OP	Mnemonic for CENSUS_CODE attribute (GSS code)
VALUE	33:41	A9	See <a href="#">note 2</a> below or 999999999 or <9S>	GSS code or code unavailable to Ordnance Survey No GSS code allocated
VAL_TYPE	42:43	A2	TY	Type of admin area or voting area (AA or VA), or FA for non-area or TA for sea
VALUE	44:45	A2		See <a href="#">note 5</a> below

VAL_TYPE	46:47	A2	AC	Code of admin area or voting area
VALUE	48:50	A3		See <a href="#">note 6</a> below
VAL_TYPE	51:52	A2	NM	Mnemonic for NAME attribute. See <a href="#">note 7</a> below
VALUE	53:*	A*	See <a href="#">note 3</a> below	Admin area name or sea
DIVIDER	*:*	A1	\	Divider used to terminate variable length text fields
VAL_TYPE	*:*	A2	NB	Mnemonic for NON_TYPE_CODE (optional)
VALUE	*:*	A3	See <a href="#">note 4</a> below	Code for the non-type that exactly matches this area
CONT_MARK	*:*	I1	0 or 1	No further records or continuation record follows
EOR	*:*	A1	%	Record terminator

**Record examples:**

```
14002897AI017765NA000005894055OPE10000014TYAACCTYNMHampshire County\0%
14001799AI016261NA000000129905OPE07000229TYAACDISNMWorthing District (B)\NB1%
00CPC0%
14000195AI025588NA000000899830OPE06000003TYAACUTANMRedcar and Cleveland (B)\1%
00NBUTENBCTY0%
```

....	....1....	....2....	....3....	....4....	....5....	....6....	....7....	....8
1234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890								
....	....	....	....	....	....	....	....	....

Template

NOTE 1: valid {VALUE} for AI range is 000000 to 999999.

NOTE 2: see [GSS codes](#) in chapter 3 of the user guide.

NOTE 3: Continuation Record(s) [CONTREC] commence with the record descriptor 00.

NOTE 4:

Civil parish or community	CPC
County	CTY
County electoral division	CED
Unitary authority electoral division	UTE
Unitary authority ward	UTW

NOTE 5:

Civil administrative area	AA
Civil voting area	VA
Topographic area	TA
Judicial area	JA
Filler area	FA

NOTE 6:

**England**

Description	AC	TY
Civil parish or community	CPC	AA
County	CTY	AA
County electoral division	CED	VA
District	DIS	AA
District ward	DIW	VA
European region	EUR	VA
Greater London Authority	GLA	AA
Greater London Authority Assembly constituency	LAC	VA
London borough	LBO	AA
London borough ward	LBW	VA

**Wales**

Description	AC	TY
Civil parish or community	CPC	AA
European region	EUR	VA
Non-civil parish or community	NCP	FA
Unitary authority	UTA	AA
Unitary authority electoral division	UTE	VA
Welsh Assembly constituency	WAC	VA
Welsh Assembly electoral region	WAE	VA
Westminster constituency	WMC	VA

**Scotland**

Metropolitan county	MTC	AA	Description	AC	TY
Metropolitan district	MTD	AA	European region	EUR	VA
Metropolitan district ward	MTW	VA	Scottish Parliament constituency	SPC	VA
Non-civil parish or community	NCP	FA	Scottish Parliament electoral region	SPE	VA
Unitary authority	UTA	AA	Unitary authority	UTA	AA
Unitary authority electoral division	UTE	VA	Unitary authority ward	UTW	VA
Unitary authority ward	UTW	VA	Unitary authority electoral division	UTE	VA
Westminster constituency	WMC	VA	Westminster constituency	WMC	VA

NOTE 7: punctuation is shown in names but not accentuation, for example, the name Westward Ho! Ward includes the exclamation mark, but Ynys Môn is shown as Ynys Mon.

## Attribute Record [ATTREC] 14 for Polygon Record [POLYGON] 31 and Complex Polygon Record [CPOLY] 33

Field	Position	Format	Content	Description
REC_DESC	01:02	A2	14	Record descriptor
ATT_ID	03:08	I6	Variable number	Unique in the file. Cross-reference to {ATT_ID} in Polygon Record or Complex Polygon Record
VAL_TYPE	09:10	A2	PI	Mnemonic for GLOBAL_POLYGON_ID
VALUE	11:16	I6	See note 1 below	Unique in dataset ID for polygon.
VAL_TYPE	17:18	A2	HA	Mnemonic for HECTARES attribute
VALUE	19:30	R12,3	Variable number	Area of polygon or complex polygon
CONT_MARK	31:31	I1	0	No further records
EOR	32:32	A1	%	Record terminator

### Record example:

14000046PI800046HA0000039468770%

....	....1....	....2....	....3....	....4....	....5....	....6....	....7....	....8
1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890
....	....	....	....	....	....	....	....	....

Template

NOTE 1: valid {VALUE} for PI range is 040000 to 999999.

## Geometry Record [GEOMETRY1] 21

Field	Position	Format	Content	Description
REC_DESC	01:02	A2	21	Record descriptor
GEOM_ID	03:08	I6	Variable number	For link, cross-reference from {GEOM_ID} in Chain Record
GTYPE	09:09	I1	2	Defines as line geometry – a link
NUM COORD	10:13	I4	Variable number	Number of coordinate pairs
I X_COORD	14:21	I8	Variable number	Easting offset to 0.1 m
I Y_COORD	22:29	I8	Variable number	Northing offset to 0.1 m
I QPLAN	30:30	A1	<S>	Not used
ATT_ID	*:*	I6	Variable number	For links, cross reference to {ATT_ID} in Attribute Record
CONT_MARK	*:*	I1	0 or 1	No further records or continuation record follows
EOR	*:*	A1	%	Record terminator

\* = variable integer

### Record examples:

```
210000012000200000000000040009 0000000000000000 0000010%
21000002200020000000000048909 0000000000040009 0000020%
21800002200120000200000050857 0000209600050905 0000235200051086.1%
000000269100051180 0000298200051282 0000343600051455 0000371300051573 1%
000000408800051761 0000429400051866 0000457600052137 0000472600052285 1%
000000492400052503 8000020%
```

....	....1....	....2....	....3....	....4....	....5....	....6....	....7....	....8
123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890								
....	....	....	....	....	....	....	....	....

Template

NOTE 1: {X\_COORD}, {Y\_COORD} and {QPLAN} iterate the number of times shown in {NUM\_COORD}.

NOTE 2: Continuation Record(s) [CONTREC] commence with the record descriptor 00.

## Line Record [LINEREC] 23

Field	Position	Format	Content	Description
REC_DESC	01:02	A2	23	Record descriptor
LINE_ID	03:08	I6	Variable number	Line ID, unique in file
GEOM_ID	09:14	I6	Variable number	Cross-reference to {GEOM_ID} in Geometry Record for link
NUM_ATT	15:16	I2	01	The number of attribute identifiers that follow
ATT_ID	17:22	I6	Variable number	Cross-reference to {ATT_ID} in Attribute Record
CONT_MARK	23:23	I1	0	No further records
EOR	24:24	A1	%	Record terminator

### Record example:

23800463800463018004630%

....	1....	2....	3....	4....	5....	6....	7....	8
1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890
....	....	....	....	....	....	....	....	....

Template

NOTE: {LINE\_ID}, {GEOM\_ID} and {ATT\_ID} are the same variable number.

## Chain Record [CHAIN] 24

Field	Position	Format	Content	Description
REC_DESC	01:02	A2	24	Record descriptor
CHAIN_ID	03:08	I6	Variable number	Unique in file, ID of Chain. Cross-reference to {CHAIN_ID} in <a href="#">Polygon Record</a>
NUM_PARTS	09:12	I4	Variable number	Number of links for polygon within file, {GEOM_ID} and {DIR} iterate this number of times
I GEOM_ID	13:18	I6	Variable number	Cross-reference to {GEOM_ID} in <a href="#">Geometry Record</a> for link
I DIR	19:19	I1	1 or 2	Direction start to end or direction end to start
CONT_MARK	*:*	I1	0 or 1	No further records or continuation record follows
EOR	*:*	A1	%	Record terminator

\* = variable integer

### Record examples:

2400007300120000321000012100001110000101000009100003110000591000064100006311%  
000000621000060100006110%

....	1....	2....	3....	4....	5....	6....	7....	8
1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890
....	....	....	....	....	....	....	....	....

Template

NOTE: Continuation Record(s) [CONTREC] commence with the record descriptor 00.

## Polygon Record [POLYGON] 31

Field	Position	Format	Content	Description
REC_DESC	01:02	A2	31	Record descriptor
POLY_ID	03:08	I6	Variable number	Polygon ID, unique in file for administrative unit Reference to {PART_ID} in <a href="#">Collect Record</a> that is preceded by a value of 31 in {REC_DESC}
CHAIN_ID	09:14	I6	Variable number	Unique in file ID for Chain. Cross-reference to {CHAIN_ID} in <a href="#">Chain Record</a>
GEOM_ID	15:20	I6	000000	
NUM_ATT	21:22	I2	01	The number of attribute identifiers that follow
ATT_ID	23:28	I6	Variable number	Cross-reference to {ATT_ID} in <a href="#">Attribute Record</a>
CONT_MARK	29:29	I1	0	No further records
EOR	30:30	A1	%	Record terminator

### Record example:

31800463800463000000018004630%

....	....1....	....2....	....3....	....4....	....5....	....6....	....7....	....8
123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890								
....	....	....	....	....	....	....	....	....

Template

NOTE: {POLY\_ID}, {CHAIN\_ID} and {ATT\_ID} are the same variable number.

## Complex Polygon Record [CPOLY] 33

Field	Position	Format	Content	Description
REC_DESC	01:02	A2	33	Record descriptor
CPOLY_ID	03:08	I6	Variable number	Unique ID in file for complex polygons. Reference to {PART_ID} in <a href="#">Collect Record</a> that is preceded by a value of 33 in {REC_DESC}
NUM_PARTS	09:12	I4	Variable number	Number of iterations of {POLY_ID} and {SIGN}
I POLY_ID	13:18	I6		Cross-reference to {POLY_ID} in <a href="#">Polygon Record</a>
I SIGN	19:19	A1	+ or -	For containing polygons or for contained polygons respectively
GEOM_ID	*.*	I6	000000	
NUM_ATTS	*.*	I2	01	The number of attribute identifiers that follow
ATT_ID	*.*	I6	Variable number	Cross-reference to {ATT_ID} in <a href="#">Attribute Record</a>
CONT_MARK	*.*	I1	0 or 1	No further records or continuation record follows
EOR	*.*	A1	%	Record terminator

\* = variable integer

### Record example:

338008840002800614+800865-000000018008840%

....	....1....	....2....	....3....	....4....	....5....	....6....	....7....	....8
1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890
....	....	....	....	....	....	....	....	....

Template

*NOTE: Continuation Record(s) [CONTREC] commence with record descriptor 00.*

## Collection of Features Record [COLLECT] 34

Field	Position	Format	Content	Description
REC_DESC	01:02	A2	34	Record descriptor
COLL_ID	03:08	I6	Variable number	Unique identifier
NUM_PARTS	09:12	I4	Variable number	Number of iterations of {REC_DESC} and [PART_ID] – that is, the number of polygons comprising an administrative area, together with the number of voting areas
I REC_DESC	13:14	A2	31 or 33 or 34	Polygon; or complex polygon; or collect (for admin area or voting area relationships).
I PART_ID	15:20	I6	Variable number	Cross-reference to {POLY_ID} of <a href="#">Polygon Record</a> or {CPOLY_ID} of <a href="#">Complex Polygon Record</a> or the {COLL_ID} of <a href="#">Collect Record</a>
NUM_ATTS	*:*	I2	01	The number of attribute identifiers that follow
ATT_ID	*:*	I6	Variable number	Cross-reference to {ATT_ID} of <a href="#">Attribute Record</a> for collection of features
CONT_MARK	*:*	I1	0 or 1	No further records or continuation record follows
EOR	*:*	A1	%	Record terminator

\* = variable integer

### Record example:

```
34002973005531001925340029723400297134002970340029693400296834002967340029661%
003400296534002964340029633400288934002888340028673400286634002865340028641%
003400286334002713340027123400271134002710340027093400270834002707340027061%
003400270534002704340027033400270234002701340027003400269934002698340026011%
003400260034002599340025983400259734002596340025953400250534002504340025031%
003400250234002501340025003400249934002455340024543400245334002452340024511%
003400245034002449010029730%
```

....	....1....	....2....	....3....	....4....	....5....	....6....	....7....	....8
1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890
....	....	....	....	....	....	....	....	....

Template

NOTE: Continuation Record(s) [CONTREC] commence with the record descriptor 00.

## Attribute Description Record [ATTDESC] 40

Field	Position	Format	Content	Description
REC_DESC	01:02	A2	40	Record descriptor
VAL_TYPE	03:04	A2	See table below	Attribute mnemonic
FWIDTH	05:07	A3	See table below	Field width
FINTER	08:12	A5	See table below	Attribute format
ATT_NAME	13:*	A*	See table below	Attribute name. See <a href="#">note 1</a> below
DIVIDER	*:*	A1	\	Divider used to terminate variable length text fields
CONT_MARK	*:*	I1	0	No further records
EOR	*:*	A1	%	Record terminator

### Contents of [ATTDESC]

{VAL_TYPE}	{FWIDTH}	{FINTER}	{ATT_NAME}
AI	006	I6	ADMIN_AREA_ID
FC	004	I4	FEAT_CODE
LK	010	I10	GLOBAL_LINK_ID
NM	<3S>	A*	NAME (see note 1 below)
OP	009	A9	CENSUS_CODE
PI	006	I6	GLOBAL_POLYGON_ID
HA	012	R12,3	HECTARES
AC	003	A3	AREA_CODE
NA	012	R12,3	NON_INLAND_AREA
NB	003	A3	NON_TYPE_CODE
TY	002	A2	AREA_TYPE

\* = variable integer

*NOTE 1: punctuation is shown in names but not accentuation, for example, the name Westward Ho! Ward includes the exclamation mark, but Ynys Môn is shown as Ynys Mon.*

### Record examples:

```
40LK010I10 GLOBAL_LINK_ID\0%
40AI006I6 ADMIN_AREA_ID\0%
40PI006I6 GLOBAL_POLYGON_ID\0%
40NA012R12,3NON_INLAND_AREA\0%
40HA012R12,3HECTARES\0%
40NM A* NAME\0%
40OP009A9 CENSUS_CODE\0%
40TY002A2 AREA_TYPE\0%
40FC004I4 FEAT_CODE\0%
40AC003A3 AREA_CODE\0%
40NB003A3 NON_TYPE_CODE\0%
```

....		....1....		....2....		....3....		....4....		....5....		....6....		....7....		....8	
123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890																	
....		....		....		....		....		....		....		....		....	

Template

## Code List Record [CODELIST] 42

Field	Position	Format	Content	Description
REC_DESC	01:02	A2	42	Record descriptor
FIELD_NAME	03:12	A10	<10S>	Not used
VAL_TYPE	13:14	A2	AC, TY or NB	Two letter mnemonic
FINTER	15:19	A5	A2<3S> or A3<3S>	Format of CODE_VAL, where <3S> denotes three spaces following the text
NUM_CODE	20:22	I3	Variable number	Number of codes defined in list
CODE_VAL	23:*	A*		The code
DIVIDER	*:*	A1	\	Divider used to terminate variable length text fields
CODE_DES	*:*	A*		Description of the code
DIVIDER	*:*	A1	\	Divider used to terminate variable length text fields
CONT_MARK	*:*	I1	0 or 1	No further records or continuation record follows
EOR	*:*	A1	%	Record terminator

\* = variable integer

### Record examples:

```
42          ACA3   028CPC\CIVIL PARISH OR COMMUNITY\CPW\CIVIL PARISH OR COMMU1%
00NITY WARD\CTY\COUNTY\CED\COUNTY ELECTORAL DIVISION\DIS\DISTRICT\DIW\DISTRICT1%
00T WARD\EUR\EUROPEAN REGION\GLA\GREATER LONDON AUTHORITY\LAC\GREATER LONDON 1%
00AUTHORITY ASSEMBLY CONSTITUENCY\LBO\LONDON BOROUGH\LBW\LONDON BOROUGH WARD\1%
00MTC\METROPOLITAN COUNTY\MTD\METROPOLITAN DISTRICT\MTW\METROPOLITAN DISTRICT1%
00 WARD\NAT\NATION\NCP\NON CIVIL PARISH OR COMMUNITY\NPW\NON CIVIL PARISH OR 1%
00COMMUNITY WARD\PSD\PETTY SESSIONAL DIVISION\RLM\REALM\SPC\SCOTTISH PARLIAME1%
00NT CONSTITUENCY\SPE\SCOTTISH PARLIAMENT ELECTORAL REGION\SEA\SEA\UTA\UNITAR1%
00Y AUTHORITY\UTE\UNITARY AUTHORITY ELECTORAL DIVISION\UTW\UNITARY AUTHORITY 1%
00WARD\WAC\WELSH ASSEMBLY CONSTITUENCY\WAE\WELSH ASSEMBLY ELECTORAL REGION\WM1%
00C\WESTMINSTER CONSTITUENCY\0%
42          TYA2   005AA\CIVIL ADMINISTRATION AREA\VA\CIVIL VOTING AREA\FA\FI1%
00LLER AREA\JA\JUDICIAL AREA\TA\TOPOGRAPHIC AREA\0%
42          NBA3   006CPC\CIVIL PARISH OR COMMUNITY\CPW\CIVIL PARISH OR COMMU1%
00NITY WARD\CTY\COUNTY\CED\COUNTY ELECTORAL DIVISION\UTE\UNITARY AUTHORITY EL1%
00ECTORAL DIVISION\UTW\UNITARY AUTHORITY WARD\0%
```

....	....1....	....2....	....3....	....4....	....5....	....6....	....7....	....8
12345678901234567890123456789012345678901234567890123456789012345678901234567890								
....	....	....	....	....	....	....	....	....

Template

## Volume Termination Record [VOLTERM] 99

Field	Position	Format	Content	Description
REC_DESC	01:02	A2	99	Record descriptor
FREE_TEXT	03:*	A*	See note 1 below	Message
CONT_VOL	*:*	I1	0 or 1	No further volumes or continuation volume follows
EOR	*:*	A1	%	Record terminator

\* = variable integer

*NOTE: if there are further volume(s) to follow, the {FREE\_TEXT} field contains the following message:  
End Of Volume (nn). Transfer Set Continues On Volume (nn+1)*

If there are no further volumes, the {FREE\_TEXT} field contains following the message:  
End Of Transfer Set

### Record examples:

99End Of Volume 01 Transfer. Set Continues On Volume 02 1%

....	....1....	....2....	....3....	....4....	....5....	....6....	....7....	....8
123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890								
....	....	....	....	....	....	....	....	....

Template

99End Of Transfer Set1%

....	....1....	....2....	....3....	....4....	....5....	....6....	....7....	....8
123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890								
....	....	....	....	....	....	....	....	....

Template

## Annexe A Glossary

### **absolute coordinates**

A coordinate pair or triplet measured directly from the origin of the coordinate system in which it lies and not to any other point in the system.

### **accuracy**

The closeness of the results of observations, computations or estimates to the true values or the values accepted as being true. Accuracy relates to the exactness of the result, and is the exactness of the operation by which the result is obtained.

### **administrative area**

A blanket term used by Ordnance Survey to refer to all public administrative areas, specifically local government management and electoral areas.

### **administrative unit**

A single administrative area.

### **alphanumeric**

Information in character form.

### **American Standard Code for Information Interchange (ASCII)**

A 7-bit code for encoding a standard character set.

### **area**

A spatial extent defined by circumscribing lines that form a closed perimeter that does not intersect itself.

### **attribute**

An attribute is a property of an entity, usually used to refer to a non-spatial qualification of a spatially referenced entity. For example, a name or descriptive code indicating what an entity represents or how it should be portrayed.

### **attribute class**

A specific group of attributes, for example, those describing measure, serviceability, structure or composition.

### **attribute code**

An alphanumeric identifier for an attribute type.

### **attribute value**

A specific quality or quantity assigned to an attribute.

### **boundary**

Boundaries define the areas of the various national, local government and some European authorities.

### **CAD**

Computer-aided design.

### **census code**

Identifies the Government Statistical Service (GSS) codes that were released in Boundary-Line in October 2010.

### **centroid**

The position of the centre of gravity of an entity – often used to reference polygons.

### **character**

A distinctive mark; an inscribed letter; one of a set of writing symbols.

### **chain**

A closed loop of links bounding a polygon.

### **character string**

A one-dimensional array of characters held either in memory or in another storage medium.

**coding**

Allocation of a feature code to a feature being created from constituent construction data – points and/or segments; with optional linking to an existing feature of the same feature code.

**compact disc – read-only memory (CD-ROM)**

A data storage medium. A 12 cm disc read by laser.

**coordinate pair**

A coordinate pair is an easting and a northing.

**coordinates**

Pairs of numbers expressing horizontal distances along original axes. Alternatively triplets of numbers measuring horizontal and vertical distances. Row and column numbers of pixels from raw imagery are not considered coordinates for the purpose of the standard.

**continuation mark**

A logical record may contain more data than can be held in a single physical record. The physical record contains a continuation mark (the penultimate character of the record in NTF) to indicate whether more data is to be found in a continuation record.

**continuation record**

A specific NTF term. A continuation record is used where space does not allow one logical record to be contained wholly within one physical record.

**copyright**

Copyright is a legal property right that enables the creator and/or owner of an original work to protect it from unauthorised use. Through the *Copyright, Designs and Patents Act 1988*, Crown copyright continues to subsist in all Ordnance Survey products until the end of the period of 50 years from the end of the year in which they were published, and in the case of data, from the end of the year in which it was extracted from the Ordnance Survey database. Crown copyright is vested in The Controller of Her Majesty's Stationery Office, who has delegated powers to the Director General, Ordnance Survey for the administration of copyright in publications and data, including the determination of terms and conditions under which permission for their reproduction is given.

**currency**

An expression of the up-to-dateness of data.

**data**

A representation of facts, concepts or instructions in a formalised manner suitable for communication, interpretation or processing.

**database**

An organised, integrated collection of data stored so as to be capable of use in relevant applications, with the data being accessed by different logical paths. Theoretically it is application-independent, but in practice rarely so.

**database (NTF)**

A group of one or more sections with common characteristics defined in a data dictionary. Information and data being transferred in a transfer set is deemed to belong to one or more databases. These may be databases in the literal sense, or may be collections of data from a common source, such as a national coverage of large-scale mapping.

**data capture**

The encoding of data. In the context of digital mapping, this includes map digitising, direct recording by electronic survey instruments and the encoding of text and attributes by whatever means.

**data format**

A specification that defines the order in which data is stored or a description of the way data is held in a file or record.

**data model**

An abstraction of the real world that incorporates only those properties thought to be relevant to the application or applications at hand. The data model would normally define specific groups of entities and their attributes, and the relationship between these entities. A data model is independent of a computer system and its associated data structures. A map is one example of an analogue data model.

**data quality**

Attributes of a dataset that define its suitability for a particular purpose, for example, completeness, positional accuracy, currency, logical structure and so on.

**dataset**

Data as supplied in a particular format to customers, whether internal or external to Ordnance Survey.

**data structure**

The defined logical arrangement of data as used by a system for data management; a representation of a data model in computer form.

**derived map**

A map which has been produced by reference to other source maps, rather than directly from a survey.

**digital**

Data which is expressed as numbers (digits) in computer readable form is said to be digital.

**distinctive name**

A text feature consisting of text string(s) which form(s) a proper name.

**eastings**

See [rectangular coordinates](#).

**entity**

Something about which data is stored in a databank or database. For example, boundary and name. The data may consist of relationships, attributes, positional and shape information and so on. Often synonymous with feature.

**explicit**

Data that is directly represented in digital form. For example, the relationship between two objects is explicit if recorded by such means as pointers and does not have to be deduced by further analysis of the data.

**feature**

An item of detail within a map that can be a point and/or symbol, text or line.

**feature (NTF)**

The formal representation of an object. A simple feature (or primitive) exists in NTF when a point, line, complex line, polygon, text string or external record is created, with or without associated attribute records. A complex feature exists in NTF when a group of simple and/or complex feature records are combined in a complex polygon or collection of features record, with or without associated attribute records.

**feature classification record**

A specific, named NTF record [FEATCLASS] that lists the feature codes in use in the current database.

**feature code (FC)**

An alphanumeric attribute code used in digital map data to describe each feature in terms either of the object surveyed or its representation on the map (or both).

**feature record**

The logical information, both spatial and attribute, describing a feature or entity.

**feature serial number (FSN)**

A number used as a feature identifier usually allocated on a sequential basis.

**field**

A specified part of a record containing a unit of data, such as the date of digitising. The unit of data may be a data element or a data item. In NTF, a field is a subdivision of a physical record. Every field has a name and a predefined interpretation.

**file**

An organised collection of related records. The records on a file may be related by a specific purpose, format or data source, and the records may or may not be arranged in sequence. A file may be made up of records, fields, words, bytes, characters or bits.

**font**

The style of text character used.

**format**

The specified arrangement of data (for example, the layout of a printed document, or the arrangement of the parts of a computer instruction, or the arrangement of data in a record. A specification that defines the order in which data is stored or a description of the way data is held in a file record.

**geographical information system (GIS)**

A system for capturing, storing, checking, integrating, analysing and displaying data that is spatially referenced to the Earth. This is normally considered to involve a spatially referenced computer database and appropriate applications software.

**header**

See [map header](#).

**implicit**

Data that is not directly described in a digital form. The relationship between two adjacent objects may be implicit in that they are within a specified distance of each other. To determine this, further processing is required.

**layer**

A subset of digital map data, selected on a basis other than position. For example, one layer might consist of all features relating to counties and another to wards. Also known as a level.

**level**

A level corresponds to a single type of administrative unit, for example a ward or a district, and is conceptual in form. See also [layer](#).

**line**

A series of connected coordinated points forming a simple feature with homogeneous attribution.

**line feature**

The spatial abstraction of an object in one dimension. Lines may intersect with other lines. They are defined as a series of two or more coordinate pairs and may be curved or straight. Curved lines consist of a series of very short straight line segments. As an object abstraction, a line has no width.

**line segment**

A vector connecting two coordinated points.

**line and/or link collect**

Whenever an update occurs, the original Boundary-Line is broken into many links, due to the need to retain the old part of the boundary. This entity allows the original line to be recreated using the current links. There are as many occurrences of this entity for a given line as there are links that make it up. Any query concerning the history of a line, for example, to recreate a Boundary-Line at a point in time; needs to retrieve all the relevant occurrences and join the links together to form the geometry of the original line. This entity should relate to the NTF Collect record.

**link or edge**

Links are the representation of line features. They are made up of one or more consecutive non-intersecting link segments with common attributes between two terminating nodes. Links have no connection with other links except at the start or end, via common (shared) terminating nodes (points). All links contain their terminating coordinates. Links may form the boundaries of polygons and may be shared between polygons.

**link and node data**

A form of vector data in which linear features are represented as links. Links are terminated where they intersect other links. These intersection points, and link ends, may carry nodes whose feature records express the geometric relationships between links.

**link and node structure**

A data structure in which links and nodes are stored with cross-referencing.

**link segment**

A straight line or vector between two coordinated points.

**logical record**

A logical record contains all the information relating to a data entity (for example, a feature record). A logical record may comprise one or more physical records.

**map generalisation**

A reduction in map detail, so that the information remains clear and uncluttered when the map scale is reduced. May also involve re-sampling to larger spacing, and/or a reduction in the number of points in a line.

**map header**

Data at the start of the digital map file describing that data. It may contain information on the source and history of the geometric data within the map and the coordinate system in use, as well as holding information essential to the management of Ordnance Survey's digital mapping system.

**map scale**

The ratio between the extent of a feature on the map and its extent on the ground, normally expressed as a representative fraction, such as 1:1250 or 1:10 000.

**name**

The proper name or label of an object (real world) or feature (object abstraction). The descriptive name might consist of one or more text strings or be an attribute of the object or object abstraction.

**National Grid**

A unique referencing system that can be applied to all Ordnance Survey maps of Great Britain (GB) at all scales. It is used by Ordnance Survey on all post-war mapping to provide an unambiguous spatial reference in Great Britain for any place or entity whatever the map scale. The National Grid is defined by the OSGB36<sup>®</sup> spheroid.

**NTF**

A format designed in 1988 specifically for the transfer of spatial information; it is published as British Standard BS 7567 and is administered by the British Standards Institution (see chapter 4 of the technical specification, [NTF explained](#)).

**node**

An object representation of a point which either does not form any part of a link (isolated node or polygon seed point); or the representation of a point at the start or end of a link (terminating node). The position of a node is defined by a single coordinate pair – which is repeated within all links logically connected at that node and/or containing it. A node is only deleted if the link containing it as a terminating node is deleted.

**northings**

See [rectangular coordinates](#).

**object**

A collection of entities which form a higher level entity within a specific data model.

**object (real world)**

A recognisable discrete part of the real world.

**operative date**

The date the order was made; not necessarily the day it becomes 'live and in-use'.

**origin**

The zero point in a system of rectangular coordinates.

**physical record (NTF)**

A physical record may be a fixed length containing 80 characters, or variable length containing up to 80 characters.

**point and line data**

A form of vector data designed for map production in which all map features are designated as points, lines or text. Point and line data does not carry the topological relationships between features.

**point feature**

A zero-dimensional spatial abstraction of an object with its position defined by a coordinate pair. Points are represented by nodes that may be isolated or part of a link (terminating). Points may also be represented by symbols that may have attributes such as rotation and size.

**polygon**

Polygons are a representation of areas. A polygon is defined as a closed line or perimeter completely enclosing a contiguous space and is made up of one or more links. At least one node occurs on the perimeter of a polygon where the bounding link completes the enclosure of the area. There may be many nodes connecting the bounding links of a polygon. Links may be shared between polygons. Polygons may wholly contain other polygons; or be contained within other polygons. Each may contain a single isolated node (seed point) which identifies the polygon.

**polygon boundary**

The link(s) which enclose a polygon, projected into the horizontal plane. A chain.

**polygon point**

See [seed point](#).

**positional accuracy**

The degree to which the coordinates define a point's true position in the world, directly related to the spheroid and/or projection on which the coordinate system is based.

**precision**

The exactness with which a value is expressed, whether the value be right or wrong.

**record**

A set of related data fields grouped for processing.

**rectangular coordinates**

Also known as X-Y coordinates and as eastings and northings. These are two-dimensional coordinates that measure the position of any point relative to an arbitrary origin on a plane surface (for example, a map projection).

**relative accuracy**

The measure of the internal consistency of the positional measurements in a dataset. For many local area purposes, for example, records of utility plant, relative accuracy is more important than absolute accuracy. In this case, accurate measurement of offsets from fixed points is required rather than knowledge of the true position in space.

**resolution**

A measure of the ability to detect quantities. High resolution implies a high degree of discrimination but has no implication as to accuracy. For example, in a collection of data in which the coordinates are rounded to the nearest metre, resolution is 1 metre, but the accuracy may be  $\pm 5$  metres or worse.

**section**

In NTF terminology, a subdivision of a database. In Ordnance Survey terms, this equates to a single map unit (that is a digital map file or a tile).

**seed point**

A coordinated point (isolated node) within an area (usually a defined polygon) to which alphanumeric information may be attached as an attribute, for example, a name or feature code. Also called a polygon seed, area seed or representative point.

**segment**

A chord defined by two consecutive coordinates in a line string.

**source scale**

The scale of the source information from which the map was digitised. The scale of survey for a basic scale map, or the scale of the source map for a derived map.

**spatial data**

Data that includes a reference to a two- or three-dimensional position in space as one of its attributes. It is used as a synonym for geometric data.

**Statutory Instrument**

An order made by a Minister under delegated power from Parliament. Contains changes to boundary information, the alignment, type or relationship to a named area (amalgamation) or a change of name to an area are made by order.

**string**

- 1 A set of items which can be arranged into a sequence according to a rule.
- 2 A sequence of coordinate pairs or triplets making up a line or a link.

**structured data**

Data within which collections of features (of any type) form objects. Topographically structured data also contains topological information, defining the relationships between features and objects.

**terminator**

A character, character string, field or record used to signal the end of a record or section or volume or database.

**topographic database**

A database holding data relating to physical features and boundaries on the surface of the Earth.

**topography**

The study of the physical features of the Earth. A topographic map's principal purpose is to portray and identify the features of the Earth.

**topology**

The study of the properties of a geometric figure that are not dependant on position, such as connectivity and relationships between lines, nodes and polygons.

**transfer format**

The format used to transfer data between computer systems. In general usage, this can refer not only to the organisation of data, but also to the associated information, such as attribute codes, which are required in order to successfully complete the transfer.

**transfer medium**

The physical medium on which digital data is transferred from one computer system to another. For example, CD-ROM.

**transfer set**

A specific NTF term for the data, together with its supporting information, which the customer receives.

**update**

The process of adding to and revising existing digital map data to take account of change.

**vector**

A straight line joining two data points.

**vector data**

Positional data in the form of coordinates of the ends of line segments, points, text positions and so on.

**volume**

A physical unit of the transfer medium, that is, a single disk, a single cartridge or a single tape.