

Go-Geo! Data Browser

Title: FE/HE Metadata Application Profile Guidelines

Synopsis: This document discusses the discovery metadata guidelines for the Go-Geo! data browser, a portal site developed for UK tertiary education and research.

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Date: 1 May 2003

Version: 1.0

Status: Final version

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1.0 Introduction

This document presents the first version of the Go-Geo! FE/HE Metadata Application Profile Guidelines, which have been written to serve as a reference resource for individuals and organisations wishing to document and create metadata records for their geo-referenced datasets. Use of these guidelines can also assure that compliant metadata can be created for the Go-Geo! portal site or to aid in the management of internal datasets.

1.1 What are Metadata

Metadata represent an ordered summary of information that describes something, in this case, a geospatial dataset. These details include the What, Where, When, Who and Why of the dataset, plus the means to access and use it.

Metadata reveal information that isn't apparent when looking at dataset files in a directory. The details of a dataset are embedded in the metadata file and often address the following questions:

- What is the purpose of the dataset?
- Where did the dataset originate?
- What attribute information does it contain?
- What processes or algorithms were employed to create it?
- What spatial reference system does the dataset use?
- What is the granularity of the data?
- When was the dataset created?
- What time period does the dataset content cover?
- What geographic area or extent does it cover?
- Whom do I contact for more information or access to the dataset?
- How do I obtain the dataset?
- What are the access and use restrictions and how much will it cost?
- Who is responsible for creating the metadata record for the dataset?

If these questions can be answered this assures and instils confidence that the information in the metadata file can be accessed quickly and preserved for future reference. It also means that metadata can serve as a medium for the geospatial community to discover and share datasets. This is most often achieved through gateway and portal technology. It is this technology that the FE/HE Metadata Application Profile and guidelines serve.

1.2 FE/HE Metadata Application Profile Overview

The FE/HE Metadata Application Profile represents a template containing all the fields, or elements, required for each of Go-Geo!'s metadata records. It is based on the UK National Geospatial Data Framework (NGDF) (2000), the UK metadata standard for geo-spatial data, which was originally derived from the US Federal Geographic Data Committee's (FGDC) Content Standard for Digital Geospatial Metadata (CSDGM) (1998). This standard was approved in 1994. The FE/HE Profile borrows 36 compound and data elements present in the NGDF standard and augments these with an additional 34 elements to provide a total of 71 elements (Appendix A). The 71 data elements are categorised and grouped under eight metadata major entities or headings. These elements include 27 that are mandatory and primarily represent information such as contact details or selections from lists.

The 34 element additions were introduced in order to address the needs of the academic community. Two of the NGDF's elements were also modified, which in turn created an additional four elements. The Spatial Reference System (Identifier 27) and Level of Spatial Detail (Identifier 28) elements were split to provide the metadata creator greater clarity and

allow for better mapping between the profile, the FGDC standard and the ISO 19115, which is an international standard recently adopted (March, 2003) for geospatial metadata.

Combined, these elements provide the academic user the information necessary to assess the dataset type, its location, quality and completeness, temporal aspects in terms of data collection and content, and the necessary contact details to inquire further about access and use.

1.3 Metadata Entities and Element Groups

The Profile's structure is a departure from the NGDF Standard's format. The NGDF does not take full advantage of metadata entities or compound elements as referred to under the FGDC standard (CSDGM). The FE/HE Metadata Application Profile uses eight metadata entity headings to categorise and group the 71 elements. The metadata entity headings and identifiers are as follows:

- **G1 Citation;**
- **G2 Identification Information (What);**
- **G3 Data Capture Period (When);**
- **G4 Time Period Covered by Dataset (When);**
- **G5 Spatial Extent of Dataset (Where);**
- **G6 Custodian;**
- **G7 Distributor (Access);**
- **G8 Metadata Creator.**

As a means to provide further clarification for metadata creators, metadata entity subheadings were created to separate and categorise elements into subgroups and place them under metadata entity headings and subheadings.

- **G2 Identification Information (What)**
 - G2.sg1 Spatial Reference System
 - G2.sg2 Level of Spatial Detail
- **G5 Spatial Extent of Dataset (Where)**
 - G5.sg1 Spatial Referencing Using Geographic Co-ordinates
 - G5.sg1-a Spatial Referencing Using Co-ordinates of a Bounding Rectangle
 - G5.sg1-b Spatial Referencing Using Co-ordinates of a Bounding Polygon
 - G5.sg2 Spatial Referencing by Geographic Identifiers
- **G7 Distributor (Access)**
 - G7.sg1 Access and Use Constraints

A complete structure diagram of the FE/HE Metadata Application Profile can be found in Appendix B.

The use of these metadata entity headings and subheadings provides the structure to arrange the elements into logical and user friendly groupings. This in turn directs users to the entity group sections as the user navigates through the guidelines to find the relevant

elements to reference. This arrangement also offers support to the template design for the metadata results pages on the Go-Geo! portal (Figure 1).

Figure 1. Go-Geo! Metadata Template Example

 [Email Record](#)
 [Print Record](#)

[< Back to Results Index](#)

What	Where	When	Access	Citation	Metadata
soil survey natmap100 <i>Access</i> Distributor: soil survey and land research centre (sslrc) Address of Distributor: cranfield university, barton rd, silsoe, bedfordshire Postcode of Distributor: mk45 4dt Tel: 01525 863263 Fax: 01525 863253 Email: sslrc@cranfield.ac.uk URL: http://www.cranfield.ac.uk/sslrc/ Access Constraints: legal Access Details: Use Constraints: use of natmap100 is subject to a data lease agreement which regulates the use and reproduction of the data. Presentation Type: map numeric Data Format: Supply Media: url magnetic optical					
Record 8 of 82					

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The FE/HE Metadata Application Profile and guidelines should establish an effective, streamlined system that introduces clear and logical steps in the process of creating complete and compliant metadata that can be displayed on the Go-Geo! portal or used for internal management of dataset documentation. Most importantly, the FE/HE Profile assures continuity, through a common thread or language, which is written and understood by an eclectic academic geo-spatial community.

1.4 Guideline Review Notes for Users

The guideline pages introduce each entity and element name to the user. Included with each name is a set of attributes, which include obligation, occurrence, identifier, data type, domain, comments and examples. These are discussed in greater detail on pages 6 and 7. Combined, these attributes provide the information and guidance necessary for the metadata creator to produce accurate and compliant metadata.

The names and attributes are presented in a tabular format. Each entity or element name and its associated attributes is referred to as a section. The name and attributes are presented in the left column with relevant content in the right column. Each name is separated into rows/boxes and when an attribute isn't relevant and reference is to the other

name (element or entity), the text is faded with light grey (e.g: Entity Name). There are a number of elements that require additional examples to provide greater clarity for the user. In this instance, there is a link to a supplemental examples document. References to page numbers are also included for those who wish to print the guidelines and examples supplement. This document represents an extension to the guidelines and contains examples that address a broader audience. These are meant to address disciplines such as archaeology and anthropology, biological sciences, civil engineering, earth sciences, environmental sciences, geography, health sciences, history and sociology. This approach is intended to introduce examples in a manner that is clear to the specific discipline. Too often, geospatial metadata guidelines are written in a generic fashion or specifically to the GIS/Geography community.

The sequence of names and attributes are displayed as follows on each of the guideline pages:

- Entity Name;
- Element Name;
- Identifier;
- Definition of Entity;
- Definition of Element;
- Obligation;
- Maximum Occurrence;
- Data Type;
- Domain;
- Comments;
- Examples.

As stated, irrelevant attributes are subject to grey fading effects. The Entity Name is repeated in faded grey for each element to inform the user which entity heading the element falls under. Other faded attributes have **Not Applicable** listed in the content box.

Each entity section provides a complete list of its group of elements in the comment box. If there are entity subheadings, these are also included in the comment box.

The list and definitions of other attributes follows.

ATTRIBUTE HEADING

DEFINITION

Identifier

An alpha-numeric reference applied to each entity and element. The elements are numbered sequentially from 1 to 70. The entities are referred to as Metadata Entities for Element Groups. There are eight main element groups, so the entity heading sequence is G1 to G8. Subheadings that fall under some of these groups are presented in the following format: G5.sg1. This refers to Group 5, subgroup 1. If another subgroup of the same hierarchy falls under G5, it becomes G5.sg2. In the case of the element subgroups falling under the Spatial Extent of Dataset, there are three hierarchies. The identifier, G5.sg1-a refers to Group 5, subgroup 1, subgroup a. There is also a second, third level hierarchy which is G5.sg1-b. This type of coding convention addresses the hierarchical nature of the FE/HE Profile and is in part due to the NGDF structure for the Spatial Extent elements, which introduces these groups of elements under headings and subheadings.

Definition of the Entity/Element	Provides a brief description of the entity or element.
Obligation	States the obligation of the metadata creator to use and provide information for an element. When applied to an entity, it suggests that the stated obligation applies to one or many of its elements. These are the following obligations: (M) Mandatory. The element or an entity's element(s) requires information. In these instances, the word Mandatory will be presented in bold to bring this to the attention of the user. (M/S) Mandatory and Searchable. This pertains only to entity elements that require searchable information. In these instances, the words Mandatory and Searchable will be presented in bold text to bring this to the attention of the user. (M/C) Mandatory and Conditional. This pertains to only the Spatial Reference System entity elements. Information is required for one of the two elements in this group. If not entered for one, then it is required for the other element. In these instances, the words Mandatory and Conditional will be presented in bold text to bring this to the attention of the user. (O) Optional. The element or an entity's element(s) does not require information, but it is recommended if applicable and available. No distinction will be made (using bold text), for the word "Optional." (C) Conditional. Elements that are conditional are paired with other elements in such a way that where one element is used, the other one must also be used, for the record to make sense, and therefore one element becomes mandatory. This relationship of dependency is explained for each element that has a conditional obligation. No distinction will be made (using bold text), for the word "Conditional."
Maximum Occurrence	This specifies the number of instances that an element can be repeated. A single occurrence is displayed as "1" and "N" is used for one or more occurrences. The Title element allows for only one "1" title. The Alternative Title element allows for more than one "N," so an unlimited number of titles related to the same dataset can be entered in its field.
Data Type	Refers to the data type applicable to each field. An entity is not a data type, but elements assume various data types. These include Character String, Enumerated Lists, Real Numbers, Integers and Dates. Character string elements can have free text entered and Dates are entered using the ISO 8601 format (YYYY-DD-MM).
Domain	Specifies the values allowed for each metadata element. These are associated with the Data Type and include predefined lists of terms for the enumerated list, free text for character string, date in the ISO 8601 format, and co-ordinate values for real numbers.

Comments	Comments provide additional details and guidance for the metadata creator. They can be used to provide greater clarity to the element or entity definition and also introduce elements and entity subheadings.
Examples	This is also a means to explain and demonstrate further what type of information should be entered for the respective element. This has been expanded to provide examples for the various disciplines within academia. In some instances, these include Archaeology and Anthropology, Biological Sciences, Civil Engineering, Earth Sciences, Environmental Sciences, Geography, Health Sciences, History and Sociology.

Table 1. Index for FE/HE Metadata Application Profile entities and elements.

METADATA ENTITY ELEMENT GROUP HEADING (Level 1)	METADATA ENTITY ELEMENT SUBGROUP HEADING (Level 2)	METADATA ENTITY ELEMENT SUBGROUP HEADING (Level 3)	METADATA ELEMENTS (MANDATORY)
Citation (p11)			1) Title (p12) 2) Alternative Title (p12) 3) Creator (p13) 4) Identifier (p14) 5) Edition (p16)
Identification Information (WHAT) (p17)			6) Topic (p18) 7) Controlled Vocabulary (p19) 8) Controlled Keyword (p20) 9) Other Keywords (p21) 10) Controlled Place Name Vocabulary (p21) 11) Controlled Place Name Keywords (p22) 12) Description (p24) 13) Quality (p25) 14) Language (p26) 15) Further Information (p27) 16) Related Datasets (p28)
	Spatial Reference System (p28)		17) Co-ordinate System (p29) 18) Geographic Identifiers (p30)
	Level of Spatial Detail (p31)		19) Source Scale Denominator (p32) 20) Imagery or Raster Cell/Pixel Size (X-Value) (p33) 21) Imagery or Raster Cell/Pixel Size (Y-Value) (p34) 22) Smallest Administrative Unit (p35)
Dataset Capture Period (WHEN) (p36)			23) Status of the Start Date for Data Capture (p37) 24) Start Date of Data Capture Process (p38) 25) Status of Completion Date for Data Capture (p39) 26) Completion Date of Data Capture Process (p40) 27) Update Frequency (p41)
Time Period of Content (WHEN) (p42)			28) Start Date for Time Period Covered by Dataset (p43) 29) End Date for Time Period Covered by Dataset (p44)
Spatial Extent of Dataset (WHERE) (p45)			
	Spatial Referencing Using Geographic Co-ordinates (p47)		30) System of Spatial Referencing by Co-ordinates (p48)
		Spatial Referencing Using Co-ordinates of a Bounding Rectangle (p49)	31) West Bounding Co-ordinate (p49) 32) East Bounding Co-ordinate (p50) 33) North Bounding Co-ordinate (p51) 34) South Bounding Co-ordinate (p52)

		Spatial Referencing Using Co-ordinates of a Bounding Polygon (p53)	35) Spatial Referencing Using the Co-ordinates of a Bounding Polygon (p54)
	Referencing by Geographic Identifiers (p55)		36) Nations (p56) 37) Administrative Areas (p57) 38) Postcode Districts (p57)
Custodian (p58)			39) Name of Custodian (p59) 40) Postal Address of Custodian (p61) 41) Postal City of Custodian (p62) 42) Postal County of Custodian (p62) 43) Postal Code of Custodian (p63) 44) Postal Country of Custodian (p64) 45) Telephone Number of Custodian (p65) 46) Facsimile Number of Custodian (p66) 47) Email Address of Custodian (p66) 48) Web Address of Custodian (p67)
Distributor (ACCESS) (p68)			49) Name of Distributor (p69) 50) Postal Address of Distributor (p70) 51) Postal Code of Distributor (p71) 52) Telephone Number of Distributor (p72) 53) Facsimile Number of Distributor (p73) 54) Email Address of Distributor (p73) 55) Web Address of Distributor (p74) 56) Presentation Type (p75) 57) Data Format (p76) 58) Supply Media (p76) 59) Sample (p77) 60) On-line Linkage (p79)
	Access and Use Constraints (p80)		61) Access Constraints (p80) 62) Access Details (p81) 63) Use Constraints (p82)
Metadata Creator (p83)			64) Name of Metadata Creator (p84) 65) Postal Address of Metadata Creator (p84) 66) Postal Code of Metadata Creator (p86) 67) Telephone Number of Metadata Creator (p87) 68) Facsimile Number of Metadata Creator (p87) 69) Email Address of Metadata Creator (p88) 70) Web Address of Metadata Creator (p88) 71) Metadata Last Update (p89)

2.0 Guidelines

Entity Name:	CITATION
Element Name:	Not Applicable
Identifier:	G1 (Element Group 1)
Definition of Entity:	Dataset reference information.
Definition of Element:	Not Applicable
Obligation:	(M) Mandatory. This entity contains elements that require information.
Maximum Occurrence:	(1) Once. Dataset information may be recorded only once at the CITATION entity level. This rule applies only to the element group as a whole and not each element. Each element has a separate condition or rule for the number of occurrences permitted.
Data Type:	Metadata Entity for Element Group 1
Domain:	Not Applicable
Comments:	The following five terms form the group of elements listed under this metadata entity (CITATION): 1) <i>Title</i>; 2) <i>Alternative Title</i>; 3) <i>Creator</i>; 4) <i>Identifier</i>; 5) <i>Edition</i>.
Examples:	Not Applicable

Entity Name:	CITATION
Element Name:	TITLE
Identifier:	1
Definition of Entity:	Not Applicable
Definition of Element:	The name by which the dataset is known.
Obligation:	(MS) Mandatory and Searchable. The <i>Title element</i> must have information entered in its field.
Maximum Occurrence:	(1) Once. No more than one <i>Title</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	The <i>Title element</i> provides a field for entering the dataset's title or formal title. Please provide a title that best describes that dataset. Include references to the subject, spatial and temporal aspects of the dataset. Jargon should be avoided so as to provide clarity to a broad audience from various disciplines. The leading letter and proper nouns of the title only should be capitalised. In the event that there are multiple titles, translations of titles (eg: Gaelic, Welsh), and those with acronyms, should be listed under the <i>Alternative Title element</i> field. In the event that it is necessary to include acronyms in the formal title of a dataset, then include both the acronym (in parentheses) and its definition.
Examples:	1) Link to Title examples (click) (p102)
Entity Name:	CITATION
Element Name:	ALTERNATIVE TITLE
Identifier:	2
Definition of Entity:	Not Applicable

Definition of Element:	Short name, other name, acronym or alternative language title.
Obligation:	(O) Optional. The <i>Alternative Title element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(N) Unlimited number of <i>Alternative Title</i> entries permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	The <i>Alternative Title element</i> allows for entries of multiple titles, translations of titles (e.g: Cornish, Gaelic, Welsh), and those with acronyms. The leading letter and proper nouns of the title only should be capitalised. In the event that the alternative title includes acronyms in the formal title of a dataset, then include both the acronym (in parentheses) and its definition. Acronyms should not include full-stops between each letter.
Examples:	1) Link to Alternative Title examples (click) (p103)
Entity Name:	CITATION
Element Name:	CREATOR
Identifier:	3
Definition of Entity:	Not Applicable
Definition of Element:	Organisation or person that developed the dataset and has primary responsibility for the intellectual content of the dataset.
Obligation:	(MS) Mandatory and Searchable. The <i>Creator element</i> must have information entered in its field.
Maximum Occurrence:	(N) Unlimited number of <i>Creator</i> entries permitted for this element.
Data Type:	Character String
Domain:	Free Text

Comments:	The <i>Creator element</i> field should contain information about the person or organisation that assumes primary responsibility for the intellectual content of the dataset. This is not necessarily the person or organisation named as <i>Custodian</i> or <i>Distributor</i> for the dataset, or the <i>Metadata Creator</i>. The creator is not necessarily that person who owns the intellectual property rights of the dataset. The entry format should list title first, without full-stops, then surname, middle name or initials, again, without full-stops, and given name. If relevant, organisations should include department names. All acronyms and abbreviations should be contained in parentheses. Examples are provided below for individuals and organisations. Use of initials or full name is acceptable, though the full name and title is preferable to assure that the correct person can be identified. Some confusion could occur with several people sharing the same surname and first letter of their given names, e.g: J Doe could be Jane or John Doe.
Examples:	Individuals: 1) Professor Doe, Jane 2) Dr Doe, Jane 3) Ms Doe, Jane 4) Miss Doe, Jane 5) Mrs Doe, Jane 6) Doe, Mary Jane 7) Doe, M Jane 8) Doe, Jane 9) Mr Doe, John Organisations: 1) UK Data Archive (UKDA), University of Essex 2) EDINA, University of Edinburgh 3) Department of Geography, University of Edinburgh 4) Institute for Labour Research, University of Essex
Entity Name:	CITATION
Element Name:	IDENTIFIER
Identifier:	4
Definition of Entity:	Not Applicable

Definition of Element:	A unique string or number used to identify the dataset.
Obligation:	(O) Optional. The <i>Identifier element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(1) Once. No more than one <i>Identifier</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	The <i>Identifier element</i> provides the option of entering a unique string or number that identifies the dataset in a given context. Many datasets are assigned unique strings or numbers for the purpose of identifying individual datasets. If your organisation follows the same practice, the entry of the dataset's identifier in this element's field will serve as a useful tracking code to access information about the dataset. If the identifier code is embedded into the metadata file name, which can be cross-referenced on a spreadsheet, this would provide an expeditious means for locating the dataset to answer internal or external enquiries about it. There are a number of identifiers that are recognised and used internationally. One of the more common identifiers, the ISSN (International Standard Serial Number), is an eight-digit number, which references and identifies periodical or serial publications. The ISBN (International Standard Book Number) is a unique machine-readable identification 10 digit number that is assigned to individual monographs (books). Maps, microform publications, pamphlets, software and multimedia kits with printed material can also be included for ISBN numbers. In addition to these, there are other types of identifiers. European Article Numbers (EANs) and Universal Product Codes (UPCs) are used as bar codes. Digital Object Identifiers (DOI) are commonly used for digital commerce. Uniform Resource Locator (URL), Uniform Resource Identifier (URI), Uniform Resource Name (URN) and Persistent (Uniform Resource Locator), or PURL, are used to identify and locate web resources. The recently approved ISAN (International Standard Audiovisual Number) is a voluntary numbering system used for referencing and identifying audiovisual works. The ISAN is a 16 digit code.

Examples:	1) ISBN:L 00 101 020 12 2) ISBN: 00-101-020-12 3) ISSN: 0010-1012 4) ISAN: 123456787654-4321 5) http://identifier.ac.uk
Entity Name:	CITATION
Element Name:	EDITION
Identifier:	5
Definition of Entity:	Not Applicable
Definition of Element:	The number of the edition of the dataset.
Obligation:	(M) Mandatory. The <i>Edition element</i> must have information entered in its field.
Maximum Occurrence:	(1) Once. No more than one <i>Edition</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	The <i>Edition element</i> provides a field to enter the dataset edition. Typically datasets with periodic releases are assigned edition numbers. There is no need to write <i>Edition</i> in the field. Please include a reference to the original edition to get a sense of the number of editions that fall under a dataset. An example would be to write it as follows: 1.6 of 2.0 This element can provide a potential dataset user the information about the existence of earlier editions of the dataset. The user can match dataset editions to track changes made to the dataset, especially if there is a need to make comparisons between editions should a fee payment structure be in place. As an example, an edition 1.0 dataset may cost less than an edition 2.0 version. A potential user may have interest in an area that was not revised during changes made to the dataset, so it would be more cost-effective if he/she were to acquire the edition 1.0 version of the dataset. Data developers who do not support a edition scheme for their datasets have several options. Because this element requires an

	entry in its field, the data developer can establish an internal scheme to assign editions to datasets. The edition increments could be done in ones (1.0, 2.0, 3.0) or tenths (1.1, 1.2, 1.3), etc., depending on the types of changes made to the dataset. Additions and subtractions to datasets would constitute the necessary conditions for changes to dataset versions. Edits to datasets might be treated as not significant enough to warrant changes to a version update. If a data developer doesn't wish to track changes made to a dataset, please enter a default version of 1.0 and leave it at that. It is recommended that a version scheme is employed.
Examples:	1) 1.0 2) 1 3) First 4) 1.5 of 2.0
Entity Name:	IDENTIFICATION INFORMATION (WHAT)
Element Name:	Not Applicable
Identifier:	G2 (Element Group 2)
Definition of Entity:	Basic information about the dataset.
Definition of Element:	Not Applicable
Obligation:	(M) Mandatory. This entity contains elements that require information.
Maximum Occurrence:	(1) Dataset information may be recorded only once at the IDENTIFICATION INFORMATION entity level. This rule applies only to the element group as a whole and not each element. Each element has a separate condition or rule for the number of occurrences permitted.
Data Type:	Metadata Entity for Element Group 2
Domain:	Not Applicable

Comments:	Under the IDENTIFICATION INFORMATION metadata entity group there are the following subgroup metadata entities: (G2.sg1) SPATIAL REFERENCE SYSTEM; (G2.sg2) LEVEL OF SPATIAL DETAIL. The following 16 terms form the group and subgroup of elements listed under these metadata entities IDENTIFICATION INFORMATION, SPATIAL REFERENCE SYSTEM and LEVEL OF SPATIAL DETAIL: 6) <i>Topic</i>; 7) <i>Controlled Vocabulary</i>; 8) <i>Controlled Keywords</i>; 9) <i>Other Keywords</i>; 10) <i>Controlled Place Name Vocabulary</i>; 11) <i>Controlled Place Name Keywords</i>; 12) <i>Description</i>; 13) <i>Quality</i>; 14) <i>Language</i>; 15) <i>Further Information</i>; 16) <i>Related Dataset</i>. (G2.sg1) SPATIAL REFERENCE SYSTEM: 17) <i>Co-ordinate System</i>; 18) <i>Geographic Identifiers</i>. (G2.sg2) LEVEL OF SPATIAL DETAIL: 19) <i>Source Scale Denominator</i>; 20) <i>Imagery or Grid Raster Cell/Pixel Size (X-Value)</i>; 20) <i>Imagery or Grid Raster Cell/Pixel Size (Y-Value)</i>; 21) <i>Smallest Administrative Unit</i>.
Examples:	Not Applicable
Entity Name:	IDENTIFICATION INFORMATION (WHAT)
Element Name:	TOPIC
Identifier:	6

Definition of Entity:	Not Applicable
Definition of Element:	Main theme(s) of the dataset.
Obligation:	(M) Mandatory. The <i>Topic element</i> must have information entered in its field.
Maximum Occurrence:	(N) Unlimited number of <i>Topic</i> entries permitted for this element.
Data Type:	Enumerated List
Domain:	See Comments
Comments:	The <i>Topic element</i> provides a thematic classification for geographic data. It groups datasets under more general terms for the purpose of topical keyword searches. The <i>Topic element</i> comprises a list of words that describe the main subject of the dataset. This list originates from the International Standards Organisation (ISO) 19115 topic list. There are 19 topic names available from which to choose, and each topic is linked to a page that provides a broad range of definitions for each term. Select the link to the topic list in the box below and select the topic or topics that best classify the dataset. Multiple selections are permitted. See examples for more details.
Examples:	1) Link to Topic List and Topic Definitions (click) (p104)
Entity Name:	IDENTIFICATION INFORMATION (WHAT)
Element Name:	CONTROLLED VOCABULARY
Identifier:	7
Definition of Entity:	Not Applicable
Definition of Element:	Name of the controlled vocabulary used as a source for the controlled keywords.
Obligation:	(MS) Mandatory and Searchable. The <i>Controlled Vocabulary element</i> must have information entered in its field.
Maximum Occurrence:	(1) Once. No more than one <i>Controlled Vocabulary</i> entry permitted for this element.

Data Type:	Character String
Domain:	Free Text
Comments:	Currently, the UNESCO thesaurus has been selected as the source for controlled keywords, thus it is the default input for the controlled vocabulary field. This element was created in the event that another controlled keyword thesaurus could be added at a later date.
Examples:	1) UNESCO
Entity Name:	IDENTIFICATION INFORMATION (WHAT)
Element Name:	CONTROLLED KEYWORDS
Identifier:	8
Definition of Entity:	Not Applicable
Definition of Element:	Keywords taken from a controlled vocabulary summarising the subject of the dataset.
Obligation:	(MS) Mandatory and Searchable. The <i>Controlled Keywords element</i> must have information entered in its field.
Maximum Occurrence:	(N) Unlimited number of selections from the <i>Controlled Keywords element's</i> enumerated list permitted for this element.
Data Type:	Enumerated List
Domain:	See Comments
Comments:	These are controlled keywords that are found in the UNESCO thesaurus and are used to describe the subject or theme of the dataset. Enter a list of keywords that best describe the detailed subject information about the dataset. Until the UNESCO thesaurus is embedded in a metadata tool, the site can be accessed for use with the following link: http://www.ulcc.ac.uk/unesco/ Here, keywords may be browsed alphabetically and hierarchically. Enter those keyword terms that best describe the dataset. The Go-Geo! portal also has a link to the UNESCO thesaurus terms. Access to them can be done through the icon button to

	the right of the Keywords field. Placing the cursor over this icon will display a “Word List” box. Click the icon and the Go-Geo Keyword Thesaurus window will open and display a list of broader terms, which when selected (clicking the + sign), will reveal narrower terms.
Examples:	1) Link to Controlled Keywords examples (click) (p106)
Entity Name:	IDENTIFICATION INFORMATION (WHAT)
Element Name:	OTHER KEYWORDS
Identifier:	9
Definition of Entity:	Not Applicable
Definition of Element:	Other words or phrases summarising the subject of the dataset.
Obligation:	(OS) Optional and searchable. The <i>Other Keyword element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(N) Unlimited number of <i>Other Keyword</i> entries permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	This element allows the metadata creator to enter other keywords that are not found in the UNESCO thesaurus but which are useful for summarising the subject content of the dataset. These keywords are especially useful for very specific terms that may be better known within the respective discipline and provide users with the ability to narrow their searches further.
Examples:	1) Link to Other Keyword examples (click) (p108)
Entity Name:	IDENTIFICATION INFORMATION (WHAT)
Element Name:	CONTROLLED PLACE NAME VOCABULARY
Identifier:	10
Definition of Entity:	Not Applicable

Definition of Element:	Name of the controlled vocabulary used as a source for the controlled place name keywords.
Obligation:	(OS) Optional and searchable. The <i>Controlled Place Name Vocabulary element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(1) Once. No more than one <i>Controlled Place Name Vocabulary</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	Currently, the Ordnance Survey (OS) 1:50,000 gazetteer is available to those organisations with DIGIMAP service. This gazetteer represents one source for <i>Controlled Place Name Keywords</i>, thus it is the default input for the <i>Controlled Place Name Vocabulary</i> field. The geo-X-walk gazetteer will eventually replace the OS gazetteer as a place name source at a later undetermined date. The Getty Thesaurus of Geographic Names represents a second source for place name keywords for those without access to the OS 1:50,000 gazetteer. It is anticipated that a controlled place name gazetteer will be added at a later date, which will replace the aforementioned gazetteers. This gazetteer will provide comprehensive coverage for the United Kingdom.
Examples:	1) Ordnance Survey (OS) 1:50,000 Gazetteer 2) Getty Thesaurus of Geographic Names 3) geo-X-walk (expected to be released in the future)
Entity Name:	IDENTIFICATION INFORMATION (WHAT)
Element Name:	CONTROLLED PLACE NAME KEYWORDS
Identifier:	11
Definition of Entity:	Not Applicable
Definition of Element:	The geographic name of a location(s) covered by a dataset.

Obligation:	(OS) Optional and searchable. The <i>Controlled Place Name Keywords element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(N) Unlimited number of selections from the <i>Controlled Place Name Keywords element's</i> enumerated list are permitted for this element.
Data Type:	Enumerated List
Domain:	See Comments.
Comments:	These are controlled keywords that are found in the Ordnance Survey (OS) 1:50,000 gazetteer and are used to provide the geographic location(s) that are covered by the dataset. Search for place name keywords using the DIGIMAP Ordnance Survey 1:50,000 gazetteer. If access isn't available to the DIGIMAP service, then enter all relevant place names and these will be checked automatically and updated to conform with the OS gazetteer. No abbreviations should be used for place names (e.g: "UK" for the United Kingdom"). Selection of the correct place name to define the same area also needs to be considered. The choice between British Isles, Great Britain and United Kingdom may pose a problem for those unfamiliar with the regional geography. The United Kingdom pertains to England, Northern Ireland, Scotland and Wales. Great Britain comprises England, Scotland and Wales, and the British Isles represent all the islands and nations, including the Republic of Ireland, the Isle of Man and the Channel Islands. A hierarchical listing of place names should also be entered in the Controlled Place Name Keywords element's field. This would include a range of names for nations and local areas associated with the study area. Examples are provided in the example box below. For those without access to the OS 1:50,000 gazetteer, the Getty Thesaurus of Geographic Names may also be used. This site can be reached at the following web address: http://www.getty.edu/research/tools/vocabulary/tgn/index.html

Examples:	1) A study area that is associated with the town of Colchester, England could include the following place names, which can all be found on-line using the Getty Thesaurus of Geographic Names web site search. United Kingdom, England, Essex, Colchester 2) A study area that is associated with the town of Haddington, Scotland could include the following: United Kingdom, Scotland, East Lothian, Haddington
Entity Name:	IDENTIFICATION INFORMATION (WHAT)
Element Name:	DESCRIPTION
Identifier:	12
Definition of Entity:	Not Applicable
Definition of Element:	A brief description of the dataset. This should include some explanation as to why the dataset was produced and how it has been used since its creation.
Obligation:	(MS) Mandatory and Searchable. The <i>Description element</i> must have information entered in its field.
Maximum Occurrence:	(1) Once. No more than one <i>Description</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	The <i>Description element</i> is intended to provide information about the dataset content, the source data and the reasons for creating the dataset. There is no limitation to the amount of text that can be written; however, it is best to write a concise abstract that best describes all of the dataset's details and summarises how the dataset was used or applied in the context of the relevant project or study. The description should make it possible for potential users to assess if the dataset is suitable for their needs, without consideration of the dataset's condition or accuracy. These dataset aspects should be addressed under the QUALITY element.

Examples:	1) Link to Description examples (click) (p110)
Entity Name:	IDENTIFICATION INFORMATION (WHAT)
Element Name:	QUALITY
Identifier:	13
Definition of Entity:	Not Applicable
Definition of Element:	A general assessment of the quality of a dataset for determining its fitness for use. Quality is stated in terms of accuracy, completeness and consistency for both the data and the dataset.
Obligation:	(O) Optional. The <i>Quality element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(1) Once. No more than one <i>Quality</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	This element should reveal to a potential user a dataset's completeness, consistency and accuracy. The same assessments should also be applied to the data source(s) from which the dataset was derived. If relevant, the <i>Quality element</i> should also provide descriptions and definitions of tests and methods applied to the dataset and data source(s) for quality assurances. The <i>Quality element</i> should also address the lineage of a dataset. This is information about the events or stages and steps taken in the process to create the dataset. This is especially relevant to datasets that have been created with a Geographic Information System (GIS) package. The lineage statement would describe all the steps taken to capture and process geographical data. Furthermore, the <i>Quality element</i> should also address issues surrounding topology of the geographic features, database structure and attribute information, other data and map sources and scales, assessment of temporal accuracy, statistical methods, and any other assessments that can provide a good overview of the dataset. The advantage of providing extensive details for the <i>Quality element</i> is that it eliminates the need for the potential user to contact the data developer to enquire about the suitability and fitness of a dataset. It also assures that the data developer will not need to address questions that a potential dataset user might pose when evaluating the dataset.

	The <i>Quality element</i> also serves as an important resource for internal documentation and management of datasets. This element, along with the entire metadata record, becomes a dataset reference that an internal user can access and review before using the dataset alone or as an additional layer to another dataset.
Examples:	1) Link to Quality examples (click) (p113)
Entity Name:	IDENTIFICATION INFORMATION (WHAT)
Element Name:	LANGUAGE
Identifier:	14
Definition of Entity:	Not Applicable
Definition of Element:	The language(s) used within the dataset.
Obligation:	(M) Mandatory. The <i>Language element</i> must have information entered in its field.
Maximum Occurrence:	(N) Unlimited number of selections from the <i>Language element's</i> enumerated list permitted for this element.
Data Type:	Enumerated List
Domain:	English, Gaelic, Welsh
Comments:	Select the relevant language from the list, which includes English, Gaelic and Welsh. If more than one language is selected, then please provide a brief explanation in the <i>Description element's</i> field. This may occur if, for example, a study of place name distribution patterns has been conducted in Wales. The list of place names in the database table could include, in each instance, the Welsh name and its English equivalent.
Examples:	1) English 2) Gaelic 3) Welsh
Entity Name:	IDENTIFICATION INFORMATION (WHAT)

Element Name:	FURTHER INFORMATION
Identifier:	15
Definition of Entity:	Not Applicable
Definition of Element:	Source of further information about the dataset.
Obligation:	(O) Optional. The <i>Further Information element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(N) Unlimited number of <i>Further Information</i> entries permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	It would be useful to state where these sources might be found, including URL addresses and other access or contact details. The contact details would need to be included in this element's field if someone else other than the custodian or distributor held further information about the same source. Please include the leading code, which is most usually http:// for web addresses.
Examples:	1) http://further-info.ac.uk 2) Help Desk Contact: +44 (0) 1234 567 3) Department of Geography, University of UK, Building A, 123 High Street, Colchester, Essex, United Kingdom
Entity Name:	IDENTIFICATION INFORMATION (WHAT)

Element Name:	RELATED DATASETS
Identifier:	16
Definition of Entity:	Not Applicable
Definition of Element:	Information about other, related datasets of a similar theme or derived from a common source, which may be of interest to the user.
Obligation:	(O) Optional. The <i>Related Datasets element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(N) Unlimited number of <i>Related Dataset</i> entries permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	Comparable to a bibliography, this element can inform the user about other sources of information or datasets that could complement or augment the dataset. These might be datasets or data sources that cover the same geographic study area or extent as the documented dataset, but represent different features or data capture periods. There could also be datasets and data sources that cover an adjacent area or extend partially into the documented dataset's study area/extent. Related Datasets can be digital and/or hard copy.
Examples:	1) Link to Related Dataset examples (click) (p115)
Entity Name:	SPATIAL REFERENCE SYSTEM
Element Name:	Not Applicable
Identifier:	G2.sg1
Definition of Entity:	Name or description of the spatial referencing system used within the dataset, which may be based on co-ordinates e.g. British National Grid, Irish National Grid, latitude and longitude or geographic identifiers e.g. postcodes, postal addresses, administrative units or countries.

Definition of Element:	Not Applicable
Obligation:	(M) Mandatory. This entity contains elements that require information.
Maximum Occurrence:	(N) Dataset information may be recorded multiple times at the SPATIAL REFERENCE SYSTEM entity level. This rule applies only to the element group as a whole and not each element. Each element has a separate condition or rule for the number of occurrences permitted.
Data Type:	Metadata Entity for Element Subgroup 1 of Element Group 2
Domain:	Not Applicable
Comments:	The following two terms form the group of elements listed under this metadata entity (SPATIAL REFERENCE SYSTEM): 17) <i>Co-ordinate System</i>; 18) <i>Geographic Identifiers</i>.
Examples:	Not Applicable
Entity Name:	SPATIAL REFERENCE SYSTEM
Element Name:	CO-ORDINATE SYSTEM
Identifier:	17
Definition of Entity:	Not Applicable
Definition of Element:	Name or description of the spatial referencing system used within the dataset, which is based on co-ordinates e.g. British National Grid, Irish National Grid, and latitude and longitude.
Obligation:	(M/C) Mandatory and Conditional. The <i>Co-ordinate System element</i> must have information entered in its field if <i>Geographic Identifier element</i> (18) not used.
Maximum Occurrence:	(N) Unlimited number of <i>Co-ordinate System</i> entries permitted for this element.

Data Type:	Character String
Domain:	Free Text
Comments:	This is usually associated with digital map datasets that have been geo-referenced to a co-ordinate system. This can also apply to point datasets created with the use of Global Positioning Technology (GPS). There are three commonly used co-ordinate systems for British Isle datasets. These are the British National Grid and Irish National Grid Systems and Geographic (latitude and longitude), which is a global co-ordinate system. The British National Grid is based on the National Grid System of England, which is administered by the British Ordnance Survey. It is based on a Transverse Mercator projection. Co-ordinates are expressed in international metres. The British National Grid System covers all areas of England, Scotland and Wales and extends to the Channel Islands and the Isle of Man. The Irish National Grid is administered by the Irish Ordnance Survey and is also based on a Transverse Mercator projection with co-ordinates expressed in international metres. The Irish national Grid System extends across all of the Republic of Ireland and Northern Ireland. A geographic co-ordinate system is based on degrees of latitude and longitude and is the most commonly used system in the world. The Greenwich Primer Meridian and the equator are the reference planes used to define degrees of latitude and longitude, which are 0 degrees respectively. Additional information about the British and Irish National Grid Systems can be found at the following web sites. Ordnance Survey URL : http://www.ordsvy.gov.uk/ Ordnance Survey Ireland URL : http://www.osi.ie/
Examples:	None
Entity Name:	SPATIAL REFERENCE SYSTEM
Element Name:	GEOGRAPHIC IDENTIFIERS
Identifier:	18
Definition of Entity:	Not Applicable

Definition of Element:	Name or description of the spatial referencing system used within the dataset, which is based on geographic identifiers e.g. postcodes, postal addresses, administrative units, or countries.
Obligation:	(M/C) Mandatory and Conditional. The <i>Geographic Identifiers element</i> must have information entered in its field if <i>Co-ordinate System element</i> (17) not used.
Maximum Occurrence:	(N) Unlimited number of <i>Geographic Identifiers</i> entries permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	It is possible to have datasets that are not geo-referenced. These are typically tabular datasets that are based on referenced areas such as postcode districts, postal addresses, administrative areas, or countries. Also, digital thematic maps that have not been geo-referenced could also fall under this condition. An example of this might be a single layer digital thematic map using polygon features and colour pattern schemes to display values. The distribution of colour patterns would be considered more relevant than the co-ordinate system unless additional layers were to be introduced. That might then require a co-ordinate system to assure that all layers correspond to the same location on the earth and overlap correctly if merged together to create a composite map.
Examples:	1) Link to Geographic Identifier examples (click) (p118)
Entity Name:	LEVEL OF SPATIAL DETAIL
Element Name:	Not Applicable
Identifier:	G2.sg2 (Element Group 2.subgroup 2)
Definition of Entity:	Description of the spatial level of detail for the source data measured in terms of absolute size, relative size, resolution, granularity, or the smallest representative unit associated with disaggregated, statistical data.
Definition of Element:	Not Applicable
Obligation:	(O) Optional. This entity contains elements that do not require information, but it is recommended if applicable.

Maximum Occurrence:	(N) Dataset information may be recorded multiple times at the LEVEL OF SPATIAL DETAIL entity level. This rule applies only to the element group as a whole and not each element. Each element has a separate condition or rule for the number of occurrences permitted.
Data Type:	Metadata Entity for Element Subgroup 2 of Element Group 2
Domain:	Not Applicable
Comments:	The following four terms form the group of elements listed under this metadata entity (LEVEL OF SPATIAL DETAIL): 19) <i>Source Scale Denominator</i>; 20) <i>Imagery or Grid Raster Cell/Pixel Size (X-Value)</i>; 21) <i>Imagery or Grid Raster Cell/Pixel Size (Y-Value)</i>; 22) <i>Smallest Administrative Unit</i>.
Examples:	Not Applicable
Entity Name:	LEVEL OF SPATIAL DETAIL
Element Name:	SOURCE SCALE DENOMINATOR
Identifier:	19
Definition of Entity:	Not Applicable
Definition of Element:	Denominator of the representative fraction on the source map(s) (e.g. on a 1: 50,000 scale map, the source scale denominator is 50000). If no source map used, enter 0 (zero). If multiple source map scales were used, enter the source scale denominator of the smallest scale map (largest denominator).
Obligation:	(O) Optional. The <i>Source Scale Denominator element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(1) Once. No more than one <i>Source Scale Denominator</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text

Comments:	Only enter the denominator and not the fraction for the scale. If the dataset was derived from several map sources, use the denominator from the smallest scale map rather than listing all the scale denominators. Regarding scale, a small scale map displays the least detail. The City of London could be represented as a dot on a map of the United Kingdom. Conversely, a large scale map of London would probably be represented as polygons, lines, and points displaying streets, buildings, landmarks, local administrative boundaries and other details that wouldn't be seen on a small scale map. Only one entry is permitted, so it is recommended that the smallest scale map be used as the reference for the source scale denominator. Please keep in mind that the scale is taken from the data source of the derived dataset, and not the dataset itself. In the case of multiple map sources, It is important that the user knows the smallest scale used in order to determine the spatial accuracy of the dataset. As the map scale becomes smaller, the inaccuracy increases, which means that comparisons are difficult to make between the locations of features of one scale to those features associated with another scale. It is; therefore, critical for the user to know about the smallest scale map to assure that discrepancies can be accounted for when comparing maps, or adding maps with different scales. If the dataset has been derived from data sources of various scales, the <i>Description</i> or <i>Quality</i> element can be used to enter all the scales used along with the titles of their respective maps.
Examples:	1) Link to Source Scale Denominator examples (click) (p119)
Entity Name:	LEVEL OF SPATIAL DETAIL
Element Name:	IMAGERY OR GRID RASTER CELL/PIXEL SIZE (X-VALUE)
Identifier:	20
Definition of Entity:	Not Applicable
Definition of Element:	The column width of a raster cell expressed in distance units of measure.
Obligation:	(O) Optional. The <i>Grid Raster Cell X-Value element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(1) Once. No more than one <i>Grid Raster Cell X-Value</i> entry permitted for this element.

Data Type:	Character String
Domain:	Free Text
Comments:	This value is associated with raster datasets and represents the x-value length of the raster cell. A raster dataset contains rows and columns of cells. These can also be characterised as a matrix of screen pixels. Each cell or pixel contains an attribute value, thus cells sharing the same value may represent a feature. Many times, these cells also contain location co-ordinates that provide a reference to points in the real world. These cells are typically associated with images such as digital aerial photographs and satellite images. They can also represent Digital Terrain Models (DTM), which are raster grids that store the x, y and z values in each cell. The x and y values provide the locational co-ordinates and resolution, and the z-value provides the surface elevation. Regarding this element, the information required pertains only to the x-value length of the cell. The lengths of the x and y-values provide the dataset's resolution. If the x and y- values both equal 30 metres, then the surface area covered represents 30 x 30 metres or 900 square metres.
Examples:	1) Link to Grid Raster Cell x-value examples (click) p122
Entity Name:	LEVEL OF SPATIAL DETAIL
Element Name:	IMAGERY OR GRID RASTER CELL/PIXEL SIZE (Y-VALUE)
Identifier:	21
Definition of Entity:	Not Applicable
Definition of Element:	The row height of a raster cell expressed in distance units of measure.
Obligation:	(O) Optional. The <i>Grid Raster Cell Y-Value element</i> does not require information to be entered in its field, but recommended if applicable.
Maximum Occurrence:	(1) Once. No more than one <i>Grid Raster Cell Y-Value</i> entry permitted for this element.
Data Type:	Character String

Domain:	Free Text
Comments:	This value is associated with raster datasets and represents the y-value length of the raster cell. A raster dataset contains rows and columns of cells. These can also be characterised as a matrix of screen pixels. Each cell or pixel contains an attribute value, thus cells sharing the same value may represent a feature. Many times, these cells also contain location co-ordinates that provide a reference to points in the real world. These cells are typically associated with images such as digital aerial photographs and satellite images. They can also represent Digital Terrain Models (DTMs), which are raster grids that store the x, y and z values in each cell. The x and y values provide the locational co-ordinates and resolution, and the z-value provide the surface elevation. Regarding this element, the information required pertains only to the y-value length of the cell. The lengths of the x and y-values provide the dataset's resolution. If the x and y values both equal 30 metres, then the surface area covered represents 30 x 30 metres or 900 square metres.
Examples:	1) Link to Grid Raster Cell y-value examples (click) (p122)
Entity Name:	LEVEL OF SPATIAL DETAIL
Element Name:	SMALLEST ADMINISTRATIVE UNIT
Identifier:	22
Definition of Entity:	Not Applicable
Definition of Element:	The smallest representative unit associated with disaggregated statistical data.
Obligation:	(O) Optional. The <i>Smallest Administrative Unit element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(1) Once. No more than one <i>Smallest Administrative Unit</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text

Comments:	There are cases when scale or resolution do not apply or are unknown. If the data collected are based on areas defined within representative units, then the smallest disaggregated representative unit in which data were collected can be used to define the smallest administrative unit. If a county-wide survey has been conducted using parishes as disaggregated areas or sampling units for data collection, "parish" would be listed as the smallest representative unit.
Examples:	1) Link to Smallest Administrative Unit examples (click) (p127)
Entity Name:	DATA CAPTURE PERIOD (WHEN)
Element Name:	Not Applicable
Identifier:	G3 (Element Group 3)
Definition of Entity:	The time during which data capture took place.
Definition of Element:	Not Applicable
Obligation:	(O) Optional. This entity contains elements that do not require information, but it is recommended if applicable.
Maximum Occurrence:	(N) Dataset information may be recorded multiple times at the DATA CAPTURE PERIOD entity level. This rule applies only to the element group as a whole and not each element. Each element has a separate condition or rule for the number of occurrences permitted.
Data Type:	Metadata Entity for Element Group 3
Domain:	Not Applicable
Comments:	The following five terms form the group of elements listed under this metadata entity (DATA CAPTURE PERIOD): 23) <i>Status of the Starting Date for Data Capture;</i> 24) <i>Start Date of Data Capture Process;</i> 25) <i>Status of the Completion Date for Data Capture;</i> 26) <i>Completion Date of Data Capture Process;</i> 27) <i>Update Frequency.</i>

Examples:	Not Applicable
Entity Name:	DATA CAPTURE PERIOD (WHEN)
Element Name:	STATUS OF THE STARTING DATE FOR DATA CAPTURE
Identifier:	23
Definition of Entity:	Not Applicable
Definition of Element:	Declaration on the status of the starting date for data capture.
Obligation:	(O) Optional. The <i>Status of the Starting Date for Data Capture element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(1) Once. No more than one selection from the <i>Status of the Starting Date for Data Capture element's</i> enumerated list permitted for this element.
Data Type:	Enumerated List
Domain:	Known, Not Known, Not Applicable
Comments:	Select from one of the three in the list. If the status is <i>Known</i>, then the date will be entered in the <i>Start Date of the Date Capture element</i> field (Identifier 24). This applies to the status of the actual date known when the data have been collected. This is directed at the content of the dataset and not the time frame associated with the processes and steps taken to create the dataset.

Examples:	1) Known; 2) Not Known; 3) Not Applicable.
Entity Name:	DATA CAPTURE PERIOD (WHEN)
Element Name:	START DATE OF DATA CAPTURE PROCESS
Identifier:	24
Definition of Entity:	Not Applicable
Definition of Element:	Date on which data for dataset were first collected.
Obligation:	(C) Conditional. If <i>Status of the Starting Date for Data Capture</i> is known, then a date must be entered.
Maximum Occurrence:	(1) Once. No more than one <i>Start Date of Data Capture Process</i> entry permitted for this element.
Data Type:	Date
Domain:	YYYY-MM-DD
Comments:	If declared <i>Known</i> under the Status of Start Date for Data Capture, enter the date when the data capture or collection started. If possible, please enter the date to the day. If unknown, enter the month and year or, if the month is not known, enter only the year. The date format is based on ISO 8601, which is expressed as YYYY-MM-DD (Year-Month-Day), and uses hyphens “-” as separators. It is based on the <i>Gregorian Calendar</i> but denoted using the “<i>Common Era Calendar</i>” format. Numbers that are less than 10 for day and month are written with a leading zero. Leading zeroes are also added for year dates

	that fall between 1000 BC and AD 1000. For dates preceding the Year AD 1, then a “-” (minus) sign or hyphen is used to signify BC dates. This would be relevant for studies that include census data that were collected during antiquity.
Examples:	1) 2001-01-31 (Entire date known, including year, month and day) 2) 2001-01 (Year and month of date known, but 3) 2001 (Year known, but not month and day) 4) -0055 (The year 55 BC) 5) 0450 (The year AD 450)
Entity Name:	DATA CAPTURE PERIOD (WHEN)
Element Name:	STATUS OF THE COMPLETION DATE FOR DATA CAPTURE
Identifier:	25
Definition of Entity:	Not Applicable
Definition of Element:	Declaration on the status of the completion date for data capture.
Obligation:	(O) Optional. The <i>Status of the Completion Date for Data Capture element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(1) Once. No more than one selection from the <i>Status of the Completion Date for Data Capture element's</i> enumerated list permitted for this element.
Data Type:	Enumerated List
Domain:	Known, Not Known, Not Applicable, Ongoing

Comments:	Select from one of the four in the list. This applies to the status of the actual date known when the data have been collected or photographed. This is directed at the content of the dataset and not the time frame associated with the processes and steps taken to create the dataset. If the status is <i>Known</i>, then the date will be entered in the <i>Completion Date of the Data Capture element</i> field (Identifier 26). It is possible that an approximate target completion date exists, and it is to the discretion of the metadata creator and data developer to determine if they wish to enter a date; otherwise, <i>Not Known</i> or <i>Not Applicable</i> would be more suitable to choose for a process that has started but has not yet been completed. If the dataset is updated with new data on a continual basis, then the selection of <i>Ongoing</i> is appropriate. The <i>Frequency Update element</i> provides a field that lists the number of times updates occur.
Examples:	1) Known; 2) Not Known; 3) Not Applicable; 4) Ongoing.
Entity Name:	DATA CAPTURE PERIOD (WHEN)
Element Name:	COMPLETION DATE OF DATA CAPTURE PROCESS
Identifier:	26
Definition of Entity:	Not Applicable
Definition of Element:	Date on which data for dataset were last collected.
Obligation:	(C) Conditional. If <i>Status of the Completion Date for Data Capture</i> is known, then a date must be entered.
Maximum Occurrence:	(1) Once. No more than one <i>Completion Date of Data Capture Process</i> entry permitted for this element.
Data Type:	Date

Domain:	YYYY-MM-DD
Comments:	If the option, <i>Known</i>, is selected under the <i>Status of Completion Date for Data Capture element</i>, the date when the data capture or collection must be entered in this element's field. If possible, please enter the date to the day. The date format is based on ISO 8601, which is expressed as YYYY-MM-DD (Year-Month-Day), and uses hyphens "-" as separators. It is based on the <i>Gregorian Calendar</i> but denoted using the "<i>Common Era Calendar</i>" format. Numbers that are less than 10 for day and month are written with a leading zero. Leading zeroes are also added for year dates that fall between 1000 BC and AD 1000. For dates preceding the Year AD 1, then a "-" (minus) sign or hyphen is used to signify BC dates. This would be relevant for studies that include census data that were collected during antiquity.
Examples:	1) 2001-01-31 (Entire date known, including year, month and day) 2) 2001-01 (Year and month of date known, but not day) 3) 2001 (Year known, but not month and day) 4) -0055 (The year 55 BC) 5) 0450 (The year AD 450)
Entity Name:	DATA CAPTURE PERIOD (WHEN)
Element Name:	UPDATE FREQUENCY
Identifier:	27
Definition of Entity:	Not Applicable
Definition of Element:	The frequency with which revisions and updates are made to the dataset after its initial completion.
Obligation:	(O) Optional. The <i>Update Frequency element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(1) Once. No more than one selection from the <i>Update Frequency element's</i> enumerated list permitted for this element.

Data Type:	Enumerated List
Domain:	Hourly Daily Weekly Fortnightly Monthly Quarterly Biannually Annually Biennially Triennially Quinquennially Decennially Continuous Irregular Never Not Known Other
Comments:	Select the term from the list that best defines the time frequency established for dataset revisions and updates.
Examples:	Hourly (data are updated every hour) Daily (data are updated every day) Weekly (data are updated every week) Fortnightly (data are updated every two weeks) Monthly (data are updated every month) Quarterly (data are updated every three months) Biannually (data are update twice each year) Annually (data are updated once each year) Biennially (data are updated once every two years) Triennially (data are updated once every three years) Quinquennially (data are updated once every five years) Decennially (data are updated once every ten years) Continuous (data are updated on a repeated and frequent basis) Irregular (data are updated at erratic or uneven intervals) Never (if assumed that the data will not be updated) Not Known (data update frequency is unknown) Other (data are updated at a rate not presented on this list)
Entity Name:	TIME PERIOD COVERED BY THE DATASET (WHEN)
Element Name:	Not Applicable
Identifier:	G4 (Element Group 4)

Definition of Entity:	Time period the dataset covers.
Definition of Element:	Not Applicable
Obligation:	(O) Optional. This entity contains elements that do not require information, but it is recommended if applicable.
Maximum Occurrence:	(N) Dataset information may be recorded multiple times at the TIME PERIOD COVERED BY THE DATASET entity level. This rule applies only to the element group as a whole and not each element. Each element has a separate condition or rule for the number of occurrences permitted.
Data Type:	Metadata Entity for Element Group 4.
Domain:	Not Applicable
Comments:	The following two terms form the group of elements listed under the metadata entity (TIME PERIOD COVERED BY THE DATASET): 28) <i>Start Date for Time Period Covered by Dataset;</i> 29) <i>End Date for Time Period Covered by Dataset.</i>
Examples:	Not Applicable
Entity Name:	TIME PERIOD COVERED BY THE DATASET (WHEN)
Element Name:	START DATE FOR TIME PERIOD COVERED BY DATASET
Identifier:	28
Definition of Entity:	Not Applicable
Definition of Element:	The start date of the actual time period the dataset covers.
Obligation:	(O) Optional. The <i>Start Date for Time Period Covered by Dataset element</i> does not require information to be entered in its field, but it is recommended if applicable.

Maximum Occurrence:	(N) Unlimited number of <i>Start Date(s) for Time Period Covered by Dataset</i> entries permitted for this element.
Data Type:	Date
Domain:	YYYY-MM-DD
Comments:	This element captures the temporal aspects of the data or content of the dataset. The start date represents the beginning of the time period associated with the dataset. It can be a period of time that is different from the data capture period, or it can correspond with the data capture period if it represents a snapshot in which both are contemporaneous. The date format is based on ISO 8601, which is expressed as YYYY-MM-DD (Year-Month-Day), and uses hyphens “-” as separators. It is based on the <i>Gregorian Calendar</i> but denoted using the “<i>Common Era Calendar</i>” format. Numbers that are less than 10 for day and month are written with a leading zero. Leading zeroes are also added for year dates that fall between 1000 BC and AD 1000. For dates preceding the Year AD 1, then a “-” (minus) sign or hyphen is used to signify BC dates.
Examples:	1) 2001-01-31 (Complete date known, including year, month and day) 2) 2001-01 (Year and month of date known, but not day) 3) 2001 (Year known, but not month and day) 4) -0055 (The year 55 BC) 5) 0450 (The year AD 450)
Entity Name:	TIME PERIOD COVERED BY THE DATASET (WHEN)
Element Name:	END DATE FOR TIME PERIOD COVERED BY DATASET
Identifier:	29
Definition of Entity:	Not Applicable

Definition of Element:	The end date of the actual time period the dataset covers.
Obligation:	(O) Optional. The <i>End Date for Time Period Covered by Dataset element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(N) Unlimited number of <i>End Date(s) for Time Period Covered by Dataset</i> entries permitted for this element.
Data Type:	Date
Domain:	YYYY-MM-DD
Comments:	This element captures the temporal aspects of the data or content of the dataset. The start date represents the ending of the time period associated with the dataset. It can be a period of time that is different from the data capture period, or it can correspond with the data capture period if it represents a snapshot in which both are contemporaneous. The date format is based on ISO 8601, which is expressed in a YYYY-MM-DD format, with hyphens as separators, and based on the <i>Gregorian Calendar</i> but denoted using the “<i>Common Era Calendar</i>” format. Numbers that are less than 10 for day and month are written with a leading zero. Leading zeroes are also added for year dates that fall between 1000 BC and AD 1000. For dates preceding the Year AD 1, then a “-” (minus) sign or hyphen is used to signify BC dates.
Examples:	1) 2001-01-31 (Complete date known, including year, month and day) 2) 2001-01 (Year and month of date known, but not day) 3) 2001 (Year known, but not month and day) 4) -0055 (The year 55 BC) 5) 0450 (The year AD 450)
Entity Name:	SPATIAL EXTENT OF DATASET (WHERE)
Element Name:	Not Applicable
Identifier:	G5 (Element Group 5)

Definition of Entity:	The geographic coverage of the dataset expressed in terms of geographic identifiers (e.g. nations, administrative areas, or postcode districts) or geographic co-ordinates.
Definition of Element:	Not Applicable
Obligation:	(M) Mandatory. This entity contains elements that require information input.
Maximum Occurrence:	(1) Dataset information may be recorded only once at the first order entity level of the SPATIAL EXTENT OF DATASET entity. This rule does not apply to second and third order metadata entity subgroups and individual elements. Each second and third order metadata entity level, under the SPATIAL EXTENT OF DATASET first order entity, has a separate condition or rule for the number of occurrences permitted. Each element also has a separate condition or rule for the number of occurrences permitted.
Data Type:	Metadata Entity for Element Group 5
Domain:	Not Applicable
Comments:	Under the SPATIAL EXTENT OF DATASET metadata entity group there are the following subgroup metadata entities: G5.sg2) SPATIAL REFERENCING USING GEOGRAPHIC CO-ORDINATES; G5.sg2-a) SPATIAL REFERENCING USING CO-ORDINATES OF A BOUNDING RECTANGLE; G5.sg2-b) SPATIAL REFERENCING USING CO-ORDINATES OF A BOUNDING POLYGON; G5.sg2) SPATIAL REFERENCING BY GEOGRAPHIC IDENTIFIERS. The following nine terms form four subgroups of elements listed under this metadata entity (SPATIAL EXTENT OF DATASET): G5.L2A) SPATIAL REFERENCING USING GEOGRAPHIC CO-ORDINATES: 30) <i>System of Spatial Referencing.</i> G5.L2.SL1a) SPATIAL REFERENCING USING CO-ORDINATES OF A BOUNDING RECTANGLE: 31) <i>West Bounding Co-ordinate;</i> 32) <i>East Bounding Co-ordinate;</i> 33) <i>North Bounding Co-ordinate;</i> 34) <i>South Bounding Co-ordinate.</i>

	G5.L2.SL1b) SPATIAL REFERENCING USING CO-ORDINATES OF A BOUNDING POLYGON: 35) <i>Spatial Referencing Using the Co-ordinates of a Bounding Polygon.</i> G5.L2B) SPATIAL REFERENCING BY GEOGRAPHIC IDENTIFIERS: 36) <i>Nations;</i> 37) <i>Administrative Areas;</i> 38) <i>Postcode Districts.</i>
Examples:	Not Applicable
Entity Name:	SPATIAL REFERENCING USING GEOGRAPHIC CO-ORDINATES
Element Name:	Not Applicable
Identifier:	G5.sg1 (Element Group 5.subgroup 1)
Definition of Entity:	The geographic coverage of the dataset expressed in terms of geographic co-ordinates of a bounding rectangle or bounding polygon.
Definition of Element:	Not Applicable
Obligation:	(M) Mandatory. This entity contains elements that require information.
Maximum Occurrence:	(N) Dataset information may be recorded multiple times at the SPATIAL REFERENCING USING GEOGRAPHIC CO-ORDINATES entity level. This rule applies only to the entity level's element subgroup as a whole and not each element. Each element has a separate condition or rule for the number of occurrences permitted.
Data Type:	Metadata Entity for Element subgroup 1 of Element Group 5.
Domain:	Not Applicable

Comments:	The following term is an element listed under the metadata entity (SPATIAL REFERENCING USING GEOGRAPHIC CO-ORDINATES): 30) <i>System of Spatial Referencing</i>
Examples:	Not Applicable
Entity Name:	SPATIAL REFERENCING USING GEOGRAPHIC CO-ORDINATES
Element Name:	SYSTEM OF SPATIAL REFERENCING BY CO-ORDINATES
Identifier:	30
Definition of Entity:	Not Applicable
Definition of Element:	Name of the spatial reference system used for the geographic co-ordinates of the study area's extent.
Obligation:	(M) Mandatory. The <i>System of Spatial Referencing by Co-ordinates element</i> must have information entered in its field.
Maximum Occurrence:	(1) Once. No more than one selection from the <i>System of Spatial Referencing by Co-ordinates element's</i> enumerated list permitted for this element.
Data Type:	Enumerated List
Domain:	British National Grid, Irish National Grid, Latitude and Longitude
Comments:	This element states which spatial referencing system is used to provide the co-ordinates for the farthest western, eastern, northern and southern points of a bounding rectangle, which defines the extents of a dataset's study area. This has nothing to do with the internal spatial reference system of the dataset, which is stated under Metadata subgroup G2.sg1 (<i>Spatial Reference System</i>). Co-ordinates for both the British and Irish National Grids are based on Easting and Northing measurements expressed in metric units. Latitude/longitude are measured in degrees/minutes/seconds and need to be converted to decimal degree units. The Irish National Grid System applies to study areas associated with Northern Ireland and the Republic of Ireland. Please see examples for further details.
Examples:	1) Link to spatial referencing system examples (click)

Entity Name:	SPATIAL REFERENCING USING CO-ORDINATES OF A BOUNDING RECTANGLE
Element Name:	Not Applicable
Identifier:	G5.sg1-a (Element Group 5.subgroup 1-a)
Definition of Entity:	The geographic coverage of the dataset expressed in terms of geographic co-ordinates of a bounding rectangle.
Definition of Element:	Not Applicable
Obligation:	(M) Mandatory. This entity contains elements that require information.
Maximum Occurrence:	(N) Dataset information may be recorded multiple times at the SPATIAL REFERENCING USING CO-ORDINATES OF A BOUNDING RECTANGLE entity level. This rule applies only to the entity level's element subgroup as a whole and not each element. Each element has a separate condition or rule for the number of occurrences permitted.
Data Type:	Metadata Entity for Element subgroup 1-a of Element Group 5.
Domain:	Not Applicable
Comments:	The following four terms form part of the group of elements listed under the metadata entity (SPATIAL REFERENCING USING CO-ORDINATES OF A BOUNDING RECTANGLE): 31) <i>West Bounding Co-ordinate</i>; 32) <i>East Bounding Co-ordinate</i>; 33) <i>North Bounding Co-ordinate</i>; 34) <i>South Bounding Co-ordinate</i>.
Examples:	Not Applicable
Entity Name:	SPATIAL REFERENCING USING CO-ORDINATES OF A BOUNDING RECTANGLE
Element Name:	WEST BOUNDING CO-ORDINATES
Identifier:	31

Definition of Entity:	Not Applicable
Definition Element: of	Westernmost co-ordinate of a bounding rectangle.
Obligation:	(M) Mandatory. The <i>West Bounding Co-ordinate element</i> must have information entered in its field.
Maximum Occurrence:	(1) Once. No more than one <i>West Bounding Co-ordinate</i> entry permitted for this element.
Data Type:	Real Number
Domain:	Grid or Longitude Value
Comments:	This element lists the geospatial co-ordinate of a point representing the farthest westernmost extent of a dataset's study area. The co-ordinate value can be expressed as a National Grid co-ordinate or in longitude of a geographic co-ordinate. Grid co-ordinates should be expressed in metric units to the nearest kilometre or as a longitude value to the nearest hundredth of a degree (0.01). In terms of longitude, any value that is west of the Prime Meridian (Greenwich Meridian) must be expressed as a negative number. Degrees of longitude to the east of the meridian are expressed as positive numbers. It is recommended that the rectangle co-ordinates of a sensitive study area be generalised to assure that the actual location is not revealed to the general public. Such study areas might include archaeological sites and endangered species habitats.
Examples:	1) Link to Bounding Co-ordinate example (click) (p129)
Entity Name:	SPATIAL REFERENCING USING CO-ORDINATES OF A BOUNDING RECTANGLE
Element Name:	EAST BOUNDING CO-ORDINATES
Identifier:	32
Definition of Entity:	Not Applicable
Definition Element: of	Easternmost co-ordinate of a bounding rectangle.

Obligation:	(M) Mandatory. The <i>East Bounding Co-ordinate element</i> must have information entered in its field.
Maximum Occurrence:	(1) Once. No more than one <i>East Bounding Co-ordinate</i> entry permitted for this element.
Data Type:	Real Number
Domain:	Grid or Longitude Value
Comments:	This element lists the geospatial co-ordinate of a point representing the farthest easternmost extent of a dataset's study area. The co-ordinate value can be expressed as a National Grid co-ordinate or in longitude of a geographic co-ordinate. Grid co-ordinates should be expressed in metric units to the nearest kilometre or as a longitude value to the nearest hundredth of a degree (0.01). In terms of longitude, any value that is west of the Prime Meridian (Greenwich Meridian) must be expressed as a negative number. Degrees of longitude to the east of the meridian are expressed as positive numbers. There are several web sites that provide converters for latitude/longitude to decimal degree conversions. The example box will also include conversion examples. It is recommended that the rectangle co-ordinates of a sensitive study area be generalised to assure that the actual location is not revealed to the general public. Such study areas might include archaeological sites and endangered species habitats.
Examples:	1) Link to Bounding Co-ordinate example (click) (p129)
Entity Name:	SPATIAL REFERENCING USING CO-ORDINATES OF A BOUNDING RECTANGLE
Element Name:	NORTH BOUNDING CO-ORDINATES
Identifier:	33
Definition of Entity:	Not Applicable
Definition of Element:	Northernmost co-ordinate of a bounding rectangle.
Obligation:	(M) Mandatory. The <i>North Bounding Co-ordinate element</i> must have information entered in its field.

Maximum Occurrence:	(1) Once. No more than one <i>North Bounding Co-ordinate</i> entry permitted for this element.
Data Type:	Real Number
Domain:	Grid or Latitude Value
Comments:	This element lists the geospatial co-ordinate of a point representing the farthest northernmost extent of a dataset's study area. The co-ordinate value can be expressed as a National Grid co-ordinate or in latitude of a geographic co-ordinate. Grid co-ordinates should be expressed in metric units to the nearest kilometre or as a longitude value to the nearest hundredth of a degree (0.01). Though no part of the British Isles lies near the equator, it is important to note that in terms of latitude, any value that is south of the equator must be expressed as a negative number. Degrees of latitude to the north of the Equator are expressed as positive numbers. Because the British Isles are wholly north of the Equator, all latitudinal values will be positive. It is recommended that the rectangle co-ordinates of a sensitive study area be generalised to assure that the actual location is not revealed to the general public. Such study areas might include archaeological sites and endangered species habitats.
Examples:	1) Link to Bounding Co-ordinate example (click) (p129)
Entity Name:	SPATIAL REFERENCING USING CO-ORDINATES OF A BOUNDING RECTANGLE
Element Name:	SOUTH BOUNDING CO-ORDINATES
Identifier:	34
Definition of Entity:	Not Applicable
Definition of Element:	Southernmost co-ordinate of a bounding rectangle.
Obligation:	(M) Mandatory. The <i>South Bounding Co-ordinate element</i> must have information entered in its field.
Maximum Occurrence:	(1) Once. No more than one <i>South Bounding Co-ordinate</i> entry permitted for this element.

Data Type:	Real Number
Domain:	Grid or Latitude Value
Comments:	This element lists the geospatial co-ordinate of a point representing the farthest southernmost extent of a dataset's study area. The co-ordinate value can be expressed as a National Grid co-ordinate or in latitude of a geographic co-ordinate. Grid co-ordinates should be expressed in metric units to the nearest kilometre or as a longitude value to the nearest hundredth of a degree (0.01). Though no part of the British Isles lies near the equator, it is important to note that in terms of latitude, any value that is south of the equator must be expressed as a negative number. Degrees of latitude to the north of the Equator are expressed as positive numbers. Because the British Isles are wholly north of the Equator, all latitudinal values will be positive. It is recommended that the rectangle co-ordinates of a sensitive study area be generalised to assure that the actual location is not revealed to the general public. Such study areas might include archaeological sites and endangered species habitats.
Examples:	1) Link to Bounding Co-ordinate example (click) (p129)
Entity Name:	SPATIAL REFERENCING USING CO-ORDINATES OF A BOUNDING POLYGON
Element Name:	Not Applicable
Identifier:	G5.sg1-b (Element Group 5.subgroup 1-b)
Definition of Entity:	The geographic coverage of the dataset expressed in terms of geographic co-ordinates of a bounding polygon.
Definition of Element:	Not Applicable
Obligation:	(O) Optional. This entity contains elements that do not require information, but it is recommended if applicable.
Maximum Occurrence:	(N) Dataset information may be recorded multiple times at the SPATIAL REFERENCING USING CO-ORDINATES OF A BOUNDING POLYGON entity level. This rule applies only to the entity level's element subgroup as a whole and not each element. Each element has a separate condition or rule for the number of occurrences permitted.

Data Type:	Metadata Entity for Element subgroup 1-b of Element Group 5.
Domain:	Not Applicable
Comments:	The following term is an element listed under the metadata entity (SPATIAL REFERENCING USING CO-ORDINATES OF A BOUNDING POLYGON): 35) <i>Spatial Referencing Using the Co-ordinates of a Bounding Polygon.</i>
Examples:	Not Applicable
Entity Name:	SPATIAL REFERENCING USING CO-ORDINATES OF A BOUNDING POLYGON
Element Name:	SPATIAL REFERENCING USING CO-ORDINATES OF A BOUNDING POLYGON
Identifier:	35
Definition of Entity:	Not Applicable
Definition of Element:	The set of x and y co-ordinates (first number = easting of a point, second number = northing of a point) that make up the bounding polygon.
Obligation:	(O) Optional. The <i>Spatial Referencing Using Co-ordinates of a Bounding Polygon</i> element does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(N) Unlimited number of <i>Spatial Referencing Using Co-ordinates of a Bounding Polygon</i> entries permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	It is hoped that a tool may be provided in the future for capturing the x and y co-ordinates of a bounding polygon. As it stands now, the effort to collect and enter all the x and y values would be extremely time consuming. There are some existing Geographic Information System (GIS) software packages that will capture these co-ordinates, but conversion represents an obstacle. Entering a limited number of values of a bounding polygon might be considered as an option for capturing co-ordinates of an area that resembles the shape of the study area's extent. This is

	somewhat more precise than the bounding rectangle, which defines an area within a box and includes a greater area outside the study area unless its dimensions are similar to a rectangle. Please see example. It is recommended that the polygon co-ordinates of a sensitive study area be generalised to assure that the actual location is not revealed to the general public. Such study areas might include archaeological sites and endangered species habitats.
Examples:	1) Link to Bounding Polygon example (click) (p135)
Entity Name:	SPATIAL REFERENCING BY GEOGRAPHIC IDENTIFIERS
Element Name:	Not Applicable
Identifier:	G5.sg2 (Element Group 5.subgroup 2)
Definition of Entity:	Geographic coverage expressed in terms of geographic identifiers.
Definition of Element:	Not Applicable
Obligation:	(O) Optional. This entity contains elements that do not require information input, but it is recommended if applicable.
Maximum Occurrence:	(1) Dataset information may be recorded only once at the SPATIAL REFERENCING BY GEOGRAPHIC IDENTIFIERS entity level. This rule applies only to the element group as a whole and not each element. Each element has a separate condition or rule for the number of occurrences permitted.
Data Type:	Metadata Entity for Element subgroup 2 of Element Group 5.
Domain:	Not Applicable
Comments:	The following three terms form the group of elements listed under this metadata entity (SPATIAL REFERENCING BY GEOGRAPHIC IDENTIFIERS): 36) <i>Nations</i>; 37) <i>Administrative Areas</i>; 38) <i>Postcode Districts</i>.

Examples:	Not Applicable								
Entity Name:	SPATIAL REFERENCING BY GEOGRAPHIC IDENTIFIERS								
Element Name:	NATIONS								
Identifier:	36								
Definition of Entity:	Not Applicable								
Definition of Element:	Geographic coverage expressed in terms of nations within the British Isles.								
Obligation:	(O) Optional. The <i>Nations element</i> does not require information to be entered in its field, but it is recommended if applicable.								
Maximum Occurrence:	(N) Unlimited number of <i>Nations</i> entries permitted for this element.								
Data Type:	Enumerated List								
Domain:	<table> <tr> <td>England</td><td>Channel Islands</td></tr> <tr> <td>Northern Ireland</td><td>Isle of Man</td></tr> <tr> <td>Scotland</td><td>United Kingdom</td></tr> <tr> <td>Wales</td><td>Republic of Ireland</td></tr> </table>	England	Channel Islands	Northern Ireland	Isle of Man	Scotland	United Kingdom	Wales	Republic of Ireland
England	Channel Islands								
Northern Ireland	Isle of Man								
Scotland	United Kingdom								
Wales	Republic of Ireland								
Comments:	Select the relevant name(s) on the <i>Nations</i> list. The study area extent of a dataset should cover most, if not all of a nation. If the study area extends over only a part of a nation, then consider using <i>Administrative Areas</i> or <i>Postcode Districts</i> elements instead to define the extent. Another option would be to use a combination of <i>Nations</i> , <i>Administrative Areas</i> and <i>Postcode Districts</i> elements to define the study area. This would be practical for data collected at various geographic identifier levels as opposed to one.								
Examples:	1) Link to Nation examples (click) (p138)								
Entity Name:	SPATIAL REFERENCING BY GEOGRAPHIC IDENTIFIERS								

Element Name:	ADMINISTRATIVE AREAS
Identifier:	37
Definition of Entity:	Not Applicable
Definition of Element:	Geographic coverage expressed in terms of administrative areas.
Obligation:	(O) Optional. The <i>Administrative Areas element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(N) Unlimited number of <i>Administrative Areas</i> entries permitted for this element.
Data Type:	Enumerated List
Domain:	There are too many administrative areas to list here. Please see the Administrative Area List in the example box below.
Comments:	Select the relevant name(s) on the ADMINISTRATIVE AREA list. The extent of the study area of a dataset can cover either the entire administrative area or a portion of it in order for the area to be considered a valid entry. If nations or postcode districts provide a better representation of the study area, consider using them to define the extent rather than administrative areas. Another option would be to use a combination of <i>Nations</i>, <i>Administrative Areas</i> and <i>Postcode Districts</i> elements to define the study area. This would be practical for data collected at various geographic identifier levels as opposed to one.
Examples:	1) Link to Administrative Area examples (click) (p138)
Entity Name:	SPATIAL REFERENCING BY GEOGRAPHIC IDENTIFIERS
Element Name:	POSTCODE DISTRICTS
Identifier:	38

Definition of Entity:	Not Applicable
Definition of Element:	Geographic coverage expressed in terms of postcode districts.
Obligation:	(O) Optional. The <i>Postcode Districts element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(N) Unlimited number of <i>Postcode Districts</i> entries permitted for this element.
Data Type:	Enumerated List
Domain:	There are too many codes to list here. Please refer to existing postcode sources such as All Fields Postcode Directory (AFPD).
Comments:	Enter the relevant code(s). The extent of the study area of a dataset can cover either the entire postcode district or a portion of it in order for the district to be considered a valid entry. Another option would be to use a combination of <i>Nations</i>, <i>Administrative Areas</i> and <i>Postcode Districts</i> elements to define the study area. This would be practical for data collected at various geographic identifier levels as opposed to one.
Examples:	1) Link to Postcode District examples (click) (p138)
Entity Name:	CUSTODIAN
Element Name:	Not Applicable
Identifier:	G6 (Element Group 6)
Definition of Entity:	The organisation or person responsible for the maintenance of the dataset.
Definition of Element:	Not Applicable
Obligation:	(M) Mandatory. This entity is contains elements that require information.
Maximum Occurrence:	(1) Dataset information may be recorded only once at the CUSTODIAN entity level. This rule applies only to the element group as a whole and not each element. Each element has a

	group as a whole and not each element. Each element has a separate condition or rule for the number of occurrences permitted.
Data Type:	Metadata Entity for Element Group 6.
Domain:	Not Applicable
Comments:	The following ten terms form the group of elements listed under the metadata entity (CUSTODIAN): 39) <i>Name of Custodian</i>; 40) <i>Postal Street Address of Custodian</i>; 41) <i>Postal City of Custodian</i>; 42) <i>Postal County of Custodian</i>; 43) <i>Postal Code of Custodian</i>; 44) <i>Postal Country of Custodian</i>; 45) <i>Telephone Number of Custodian</i>; 46) <i>Facsimile Number of Custodian</i>; 47) <i>Email Address of Custodian</i>; 48) <i>Web Address of Custodian</i>.
Examples:	Not Applicable
Entity Name:	CUSTODIAN
Element Name:	NAME OF CUSTODIAN
Identifier:	39
Definition of Entity:	Not Applicable
Definition of Element:	The name of the organisation or person responsible for the maintenance of the dataset.
Obligation:	(M) Mandatory. The <i>Name of Custodian element</i> must have information entered in its field.
Maximum Occurrence:	(1) Once. No more than one <i>Name of Custodian</i> entry permitted for this element.
Data Type:	Character String

Domain:	Free Text
Comments:	If an organisation's name is listed, please provide both its full name and associated acronyms. Please place any acronyms between parentheses. If providing the name of a person, please include, in this order, her/his surname, given name and job title. If preferable, please list the job title of the responsible person. Listing only the job title eliminates the need to update this field in the event staff departures, internal transfers and the changes in the roles of staff members.
Examples:	Individuals: 1) Professor Doe, Jane 2) Dr Doe, Jane 3) Ms Doe, Jane 4) Miss Doe, Jane 5) Mrs Doe, Jane 6) Doe, Mary Jane 7) Doe, M Jane 8) Doe, Jane 9) Mr Doe, John Job Title: 1) Geographic Information Systems Manager 2) Lecturer 3) Service Co-ordinator 4) Data and Support Officer 5) Professor of Geography 6) Information Officer 7) PhD Graduate Student of History 8) Reader in Urban Planning 9) Statistician Organisations: 1) UK Data Archive (UKDA), University of Essex 2) EDINA, University of Edinburgh 3) Department of Geography, University of Edinburgh

	4) Institute for Labour Research, University of Essex
Entity Name:	CUSTODIAN
Element Name:	POSTAL STREET ADDRESS OF CUSTODIAN
Identifier:	40
Definition of Entity:	Not Applicable
Definition of Element:	Postal Street part of address for organisation or person responsible for the maintenance of the dataset.
Obligation:	(M) Mandatory. The <i>Postal Street Address of Custodian element</i> must have information entered in its field.
Maximum Occurrence:	(1) Once. No more than one <i>Postal Street Address of Custodian</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	The address information should include the following: organisation's name; the building name and/or building number; the street name; department names, house names, boroughs or any other descriptive addresses that aren't part of the city/town/village name, county or postal code.
Examples:	1) Department of Geography, University of United Kingdom, Building A, 123 High Street,
Entity Name:	CUSTODIAN

Element Name:	POSTAL CITY OF CUSTODIAN
Identifier:	41
Definition of Entity:	Not Applicable
Definition of Element:	Postal city part of address for organisation or person responsible for the maintenance of the dataset.
Obligation:	(M) Mandatory. The <i>Postal City of Custodian</i> element must have information entered in its field.
Maximum Occurrence:	(1) Once. No more than one <i>Postal City of Custodian</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	The Postal City also refers to any populated place that is listed as a city, town or village in an address.
Examples:	1) London 2) Edinburgh 3) Belfast 4) Cardiff 5) Norwich 6) Colchester 7) Manchester 8) Keele Village
Entity Name:	CUSTODIAN
Element Name:	POSTAL COUNTY OF CUSTODIAN
Identifier:	42
Definition of Entity:	Not Applicable
Definition of Element:	Postal county part of address for organisation or person responsible for the maintenance of the dataset.

Obligation:	(O) Optional. <i>Postal County of Custodian element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(1) Once. No more than one <i>Postal County of Custodian</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	If the organisation or person is located in a county, please list the county's name. If there is no county to list in the address, then the element's field may be left blank.
Examples:	1) Essex 2) Stirling 3) Glamorganshire 4) County Antrim
Entity Name:	CUSTODIAN
Element Name:	POSTAL CODE OF CUSTODIAN
Identifier:	43
Definition of Entity:	Not Applicable
Definition of Element:	Postal code part of address for the organisation or person responsible for the maintenance of the dataset.
Obligation:	(M) Mandatory. The <i>Postal Code of Custodian element</i> must have information entered in its field.
Maximum Occurrence:	(1) Once. No more than one <i>Postal Code of Custodian</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	Enter the complete postal code for the contact organisation or person.

Examples:	1) CO1 1UB 2) EH8 9LJ 3) BT7 1NN 4) CF10 3YE 5) W9 3NN
Entity Name:	CUSTODIAN
Element Name:	POSTAL COUNTRY OF CUSTODIAN
Identifier:	44
Definition of Entity:	Not Applicable
Definition of Element:	Postal country part of address for the organisation or person responsible for the maintenance of the dataset.
Obligation:	(M) Mandatory. The <i>Postal Country of Custodian element</i> must have information entered in its field.
Maximum Occurrence:	(1) Once. No more than one <i>Postal Country of Custodian</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	The Postal Countries can be entered as England, Northern Ireland, Scotland, Wales, Republic of Ireland, Channel Islands, Isle of Man or United Kingdom. This does not exclude the names of other postal countries if the custodian is located or residing in another country and maintaining data for a study area situated on the British Isles. The ISO 3166 provides a good source for official names that can be used for postal countries.

Examples:	1) United Kingdom 2) Great Britain 3) England 4) Northern Ireland 5) Scotland 6) Wales 7) Channel Isles 8) Isle of Man 9) Republic of Ireland
Entity Name:	CUSTODIAN
Element Name:	TELEPHONE NUMBER OF CUSTODIAN
Identifier:	45
Definition of Entity:	Not Applicable
Definition of Element:	Telephone number by which individuals can talk to the organisation or person responsible for the maintenance of the dataset.
Obligation:	(O) Optional. <i>Telephone Number of Custodian element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(1) Once. No more than one <i>Telephone Number of Custodian</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	The international format should be used for listing the telephone number. This includes the plus sign (+) followed by the United Kingdom's country code, the area code (with the zero in brackets) and the number.
Examples:	1) +44 (0) 123 456 789
Entity Name:	CUSTODIAN

Element Name:	FACSIMILE NUMBER OF CUSTODIAN
Identifier:	46
Definition of Entity:	Not Applicable
Definition of Element:	Facsimile number which individuals can use to contact the organisation or person responsible for the maintenance of the dataset.
Obligation:	(O) Optional. <i>Facsimile Number of Custodian element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(1) Once. No more than one <i>Facsimile Number of Custodian</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	The international format should be used for listing the telephone number. This includes the plus sign (+) followed by the United Kingdom's country code, the area code (with the zero in brackets) and the number.
Examples:	1) +44 (0) 123 456 789
Entity Name:	CUSTODIAN
Element Name:	EMAIL ADDRESS OF CUSTODIAN
Identifier:	47
Definition of Entity:	Not Applicable
Definition of Element:	Internet email address which individuals can use to contact the organisation or person responsible for the maintenance of the dataset.
Obligation:	(O) Optional. <i>Email Address of Custodian element</i> does not require information to be entered in its field, but it is recommended if applicable.

Maximum Occurrence:	(1) Once. No more than one <i>Email Address of Custodian</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	The email address should be associated with the contact name or organisation that is listed in element ID 38 (CONTACT NAME); however, as recommended there, it is preferable to provide an email address that is associated with a job title, an organisation or an internal department. This will reduce the need to provide metadata updates any time there is a change in the staff responsible for metadata.
Examples:	1) anyone@university.ac.uk
Entity Name:	CUSTODIAN
Element Name:	WEB ADDRESS OF CUSTODIAN
Identifier:	48
Definition of Entity:	Not Applicable
Definition of Element:	Custodian's World Wide Web site Uniform Resource Locator (URL) address.
Obligation:	(O) Optional. <i>Web Address of Custodian element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(1) Once. No more than one <i>Web Address of Custodian</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	This element provides the URL address for the dataset's custodian's organisation's web site. The URL address may link to the home page, the responsible internal department or a page that contains additional information about the dataset. Please include the leading code, which is most usually http:// for web addresses.

Examples:	1) http://www.data-custodian.ac.uk/
Entity Name:	DISTRIBUTOR (ACCESS)
Element Name:	Not Applicable
Identifier:	G7 (Element Group 7)
Definition of Entity:	The organisation or person responsible for the distribution of the dataset.
Definition of Element:	Not Applicable
Obligation:	(M) Mandatory. This entity is contains elements that require information.
Maximum Occurrence:	(N) Dataset information may be recorded multiple times at the DISTRIBUTOR entity level. This rule applies only to the entity level's element subgroup as a whole and not each element. Each element has a separate condition or rule for the number of occurrences permitted.
Data Type:	Metadata Entity for Element Group 7
Domain:	Not Applicable
Comments:	Under the DISTRIBUTOR (ACCESS) metadata entity there is the following subgroup metadata entity: G7.sg1) ACCESS AND USE CONSTRAINTS The following 14 terms form the group of elements listed under the metadata entity (DISTRIBUTOR (ACCESS)): 49) <i>Name of Distributor;</i> 50) <i>Full Postal Address of Distributor;</i> 51) <i>Postcode of Distributor;</i> 52) <i>Telephone Number of Distributor;</i> 53) <i>Facsimile Number of Distributor;</i> 54) <i>Email Address of Distributor;</i> 55) <i>Web Address of Distributor;</i> 56) <i>Presentation Type;</i> 57) <i>Data Format;</i>

	58) <i>Supply Media</i> ; 59) <i>Sample</i> ; 60) <i>On-line Linkage</i> ; 61) <i>Access Constraints</i> ; 62) <i>Access Details</i> ; 63) <i>Use Constraints</i> .
Examples:	Not Applicable
Entity Name:	DISTRIBUTOR (ACCESS)
Element Name:	NAME OF DISTRIBUTOR
Identifier:	49
Definition of Entity:	Not Applicable
Definition of Element:	The name of the organisation or person from whom the dataset may be obtained.
Obligation:	(M) Mandatory. The <i>Name of Distributor element</i> must have information entered in its field.
Maximum Occurrence:	(1) Once. No more than one <i>Name of Distributor</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	If an organisation is to be listed, please provide both the full name and, if used, the organisation's acronym between parentheses. If providing the name of a person, please include, in this order, her/his surname, given name and job title. If it is preferable not to provide a name, then please list the job title of the responsible person. Entering only the job title is recommended in order to account for staff departures, internal transfers and the changing roles of staff members. Listing only the job title will assure that the metadata file will not need to be updated as frequently as it would if a name were provided for this field.

Examples:	Individuals: 1) Professor Doe, Jane 2) Dr Doe, Jane 3) Ms Doe, Jane 4) Miss Doe, Jane 5) Mrs Doe, Jane 6) Doe, Mary Jane 7) Doe, M Jane 8) Doe, Jane 9) Mr Doe, John Job Title: 1) Geographic Information Systems Manager 2) Lecturer 3) Service Co-ordinator 4) Data and Support Officer 5) Professor of Geography 6) Information Officer 7) PhD Graduate Student of History 8) Reader in Urban Planning 9) Statistician Organisations: 1) UK Data Archive (UKDA), University of Essex 2) EDINA, University of Edinburgh 3) Department of Geography, University of Edinburgh 4) Institute for Labour Research, University of Essex
Entity Name:	DISTRIBUTOR (ACCESS)
Element Name:	FULL POSTAL ADDRESS OF DISTRIBUTOR
Identifier:	50
Definition of Entity:	Not Applicable
Definition of Element:	Postal address for the dataset distributor including organisation name, building name or number, street name, city, county and country.

Obligation:	(M) Mandatory. The <i>Full Postal Address of Distributor element</i> must have information entered in its field.
Maximum Occurrence:	(1) Once. No more than one <i>Full Postal Address of Distributor</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	The distributor's full postal address should include the following: The organisation's name; The building name and/or number; The street name; City or town; County (if available); Country and/or nation's name. For the British Isles, this can also include England, Northern Ireland, Scotland, Wales, United Kingdom, Channel Isles, Isle of Man, or the Republic of Ireland. Other country names may be entered if the metadata creator lives outside of any of the stated nations or countries listed in brackets.
Examples:	1) Department of Geography, University of UK, Building A, 123 High Street, Colchester, Essex, United Kingdom
Entity Name:	DISTRIBUTOR (ACCESS)
Element Name:	POSTAL CODE OF DISTRIBUTOR
Identifier:	51
Definition of Entity:	Not Applicable

Definition of Element:	Postal code part of the address.
Obligation:	(M) Mandatory. The <i>Full Postal Code of Distributor element</i> must have information entered in its field.
Maximum Occurrence:	(1) Once. No more than one <i>Full Postal Code of Distributor</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	Enter the complete postal code for the contact organisation or person.
Examples:	1) CO1 1UB 2) EH8 9LJ 3) BT7 1NN 4) CF10 3YE 5) W9 3NN
Entity Name:	DISTRIBUTOR (ACCESS)
Element Name:	TELEPHONE NUMBER OF DISTRIBUTOR
Identifier:	52
Definition of Entity:	Not Applicable
Definition of Element:	Telephone number by which individuals can talk to the organisation or person.
Obligation:	(O) Optional. <i>Telephone Number of Distributor element</i> does not require information to be entered in its field, but recommended if applicable.
Maximum Occurrence:	(1) Once. No more than one <i>Telephone Number of Distributor</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text

Comments:	The international format should be used for listing the telephone number. This includes the plus sign (+) followed by the United Kingdom's country code, the area code (with the zero in brackets) and the number.
Examples:	1) +44 (0) 123 456 789
Entity Name:	DISTRIBUTOR (ACCESS)
Element Name:	FACSIMILE NUMBER OF DISTRIBUTOR
Identifier:	53
Definition of Entity:	Not Applicable
Definition of Element:	Facsimile number which individuals can use to contact the organisation or person.
Obligation:	(O) Optional. <i>Facsimile Number of Distributor element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(1) Once. No more than one <i>Facsimile Number of Distributor</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	The international format should be used for listing the telephone number. This includes the plus sign (+) followed by the United Kingdom's country code, the area code (with the zero in brackets) and the number.
Examples:	1) +44 (0) 123 456 789
Entity Name:	DISTRIBUTOR (ACCESS)
Element Name:	EMAIL ADDRESS OF DISTRIBUTOR
Identifier:	54
Definition of Entity:	Not Applicable

Definition of Element:	Internet email address which individuals can use to contact the organisation or person.
Obligation:	(O) Optional. <i>Email Number of Distributor element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(1) Once. No more than one <i>Email Number of Distributor</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	The email address should be associated with the contact name or organisation that is listed in the <i>Contact Name</i> element (identifier 49); however, as recommended there, it is preferable to provide an email address that is associated with a job title, an organisation or an internal department, rather than an individual person. This will reduce the need to provide metadata updates any time there is a change in the staff responsible for metadata.
Examples:	1) anyone@university.ac.uk
Entity Name:	DISTRIBUTOR (ACCESS)
Element Name:	WEB ADDRESS OF DISTRIBUTOR
Identifier:	55
Definition of Entity:	Not Applicable
Definition of Element:	Distributor organisation's World Wide Web site Uniform Resource Locator (URL) address.
Obligation:	(O) Optional. <i>Web Address of Distributor element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(1) Once. No more than one <i>Web Address of Distributor</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text

Comments:	This element provides the URL address for the dataset's distributor's organisation's web site. The distributor may also decide to use the URL address to provide a direct on-line link to the dataset with the option of accessing and downloading the dataset. If the download option is available, then further details and instructions can be explained under the <i>Access Details element</i> (identifier 61). Please include the leading code, which is most usually http:// for web addresses.
Examples:	1) http://www.data-distributor.ac.uk/
Entity Name:	DISTRIBUTOR (ACCESS)
Element Name:	PRESENTATION TYPE
Identifier:	56
Definition of Entity:	Not Applicable
Definition of Element:	Form in which the dataset is available.
Obligation:	(O) Optional. <i>Presentation Type element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(N) Unlimited number of selections from the <i>Presentation Type element</i> 's enumerated list permitted for this element.
Data Type:	Enumerated List
Domain:	Image, Graphic, Map, Numeric, Text.
Comments:	Select one or more of the terms from the list that best describes how the dataset is presented. These can be digital or hard copy formats, which can be stated under <i>Supply Media element</i> (identifier 58). - Image presentations refer to photographs, aerial photographs and satellite images. Aerials and satellite images should represent raw data and should not have been processed for revealing data or information; photographs can be still or video recordings. - Graphic presentations represent drawings. - Map presentations refer to maps including two-dimensional and three-dimensional thematic and locational maps, digital terrain models, and any other maps that present data. These also include maps in

	vector and raster formats and processed aerial and satellite images that display information or have data layers superimposed on them. Aerial and satellite images draped over three-dimensional digital terrain models would also be categorised as maps. - Numeric presentations pertain to numbers and statistical numbers that are typically associated with tables and spreadsheets. - Text presentations can be characterised as the words and sentences of a document.
Examples:	None
Entity Name:	DISTRIBUTOR (ACCESS)
Element Name:	DATA FORMAT
Identifier:	57
Definition of Entity:	Not Applicable
Definition of Element:	Format in which digital data can be provided (e.g.: DXF, DLG, MapInfo, IDRISI, ARC/INFO, ERDAS, DBF, RTF, etc.).
Obligation:	(O) Optional. <i>Data Format element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(N) Multiple number of <i>Data Format</i> entries permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	Entries for this element can include software or file formats associated with the datasets. The individual dataset filenames do not need to be entered in this field. Only the extension names or software types are necessary. If an extension is listed, also state its format. Please see examples for clarification.
Examples:	1) Link to List of Digital Data Formats (click) (p141)
Entity Name:	DISTRIBUTOR (ACCESS)
Element Name:	SUPPLY MEDIA

Identifier:	58
Definition of Entity:	Not Applicable
Definition of Element:	Media formats in which the dataset can be supplied.
Obligation:	(O) Optional. <i>Supply Media element</i> does not require information to be entered in its field, but recommended if applicable.
Maximum Occurrence:	(N) Unlimited number of selections from the <i>Supply Media element's</i> enumerated list permitted for this element.
Data Type:	Enumerated List
Domain:	Paper, Magnetic, Optical, On-line, Other.
Comments:	Select one or more of the relevant media provided on the list: • PAPER implies that data are presented on a paper medium, which could then be sent through the post to the user; • MAGNETIC media provide datasets on 3.5 and 5.25 inch diskettes and tapes; • OPTICAL media refer to CD-ROM and DVD formats; • ON-LINE options provide direct computer linkage to dataset files; • OTHER may represent transmission of datasets through satellite or telephone links.
Examples:	None
Entity Name:	DISTRIBUTOR (ACCESS)
Element Name:	SAMPLE
Identifier:	59
Definition of Entity:	Not Applicable
Definition of Element:	A sample of the dataset and its approximate file size (Megabytes).

Obligation:	(O) Optional. <i>Sample element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(N) Multiple number of <i>Sample</i> entries permitted for this element.
Data Type:	Image or Free Text
Domain:	CGM/GIF/JPEG/TIFF or Text
Comments:	This elements offers the user the opportunity to visualise a portion of the dataset for further evaluation. The sample can be presented as a standard graphic or text file, and include the file size of the sample graphic. A text file would be more commonly used to display tabular data. An option should exist for the GoGeo! user eventually to see the sample image through a link on the portal, or as a downloadable file. The sample file may also be used to introduce definitions of terms, abbreviations and/or attribute labels, though reference should be made to this in the QUALITY element's field. This would include the sample's file name and a description of the content that the image displays. The sample image is typically a screen shot capture or exported image/text file that provides a sample presentation of the dataset. It is to the discretion of the dataset provider to determine how much detail is to be presented in the image, though it should convey enough information without exposing the entire dataset to the user. It might also be practical to type COPYRIGHT in light grey text across the image or employ other means to obscure some of the data to prevent unauthorised use of the sample graphic presentation of the data. The data creator should ultimately be responsible for determining if this practice should be employed unless the data distributor is licenced to alter the sample files. It is the responsibility of the metadata creator to ensure that all such images are presented correctly and with the copyright owner's permission. The recommended formats are as follows for sample files: Computer Graphics Metafile (CGM) is an ISO/IEC standard format for storing and transferring vector graphics). Less commonly used in comparison to JPEG and TIFF. Joint Photographic Experts Group (JPEG) is not a file format, but rather a compression method that is used in file formats such as TIFF or JFIF, but saves graphic images as *.jpeg or *.jpg files. Probably the most suitable file format to use because of its compression method, which accounts for smaller file sizes. The Tag Image File Format (TIFF) is a common public domain image file format that is supported by many graphic applications and saves graphic images as *.tif or *.tiff files. File size tends to be larger than the JPEG file format. Text file format is based on the ASCII (American Standard Code for Information Interchange), which is a common format for text files. This is most suitable for displaying portions of documents or

	samples of tabular datasets and is saved in a *.txt format. Industry standard spreadsheet and tables can be saved as tab delimited text files.
Examples:	1) sample.cgm 2) sample.jpg 3) sample.jpeg 4) sample.tiff 5) sample.tif 6) sample.txt 7) Link to Sample example (click) (p145)
Entity Name:	DISTRIBUTOR (ACCESS)
Element Name:	ON-LINE LINKAGE
Identifier:	60
Definition of Entity:	Not Applicable
Definition of Element:	The name of the World Wide Web site or other on-line source that contains the dataset.
Obligation:	(O) Optional. <i>On-line Linkage element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(N) Multiple number of <i>On-line Linkage</i> entries permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	This element provides the URL or FTP address for the user to directly access the dataset or resource.

Examples:	1) http://www.data-distributor.ac.uk/ 2) ftp://data-distributor/data/
Entity Name:	ACCESS AND USE CONSTRAINTS
Element Name:	Not Applicable
Identifier:	G7.sg1 (Element Group 7.subgroup 1)
Definition of Entity:	Not Applicable
Definition of Element:	Restrictions and legal prerequisites for accessing or using the dataset.
Obligation:	(O) Optional. This entity contains elements that do not require information, but it is recommended if applicable.
Maximum Occurrence:	(N) Dataset information may be recorded multiple times at the ACCESS AND USE CONSTRAINTS entity level. This rule applies only to the entity level's element subgroup as a whole and not each element. Each element has a separate condition or rule for the number of occurrences permitted.
Data Type:	Metadata Entity for Element subgroup 1 of Element Group 7
Domain:	Not Applicable
Comments:	The following three terms form part of the group of elements listed under the level 2 entity (ACCESS AND USE CONSTRAINTS): 61) <i>Access Constraints</i> ; 62) <i>Access Details</i> ; 63) <i>Use Constraints</i> .
Examples:	Not Applicable
Entity Name:	ACCESS AND USE CONSTRAINTS
Element Name:	ACCESS CONSTRAINTS
Identifier:	61
Definition of Entity:	Not Applicable

Definition of Element:	Restrictions and legal prerequisites for accessing the dataset. These include any access constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on obtaining the dataset.
Obligation:	(O) Optional. <i>Access Constraints element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(N) Unlimited number of selections from the <i>Access Constraints element</i> 's enumerated list permitted for this element.
Data Type:	Enumerated List
Domain:	Financial, Legal, Other, Not Known, None.
Comments:	Select one or more of the choices from the list that best describes the type of ACCESS CONSTRAINT applied to the dataset. Financial constraints would probably require a licensing agreement that includes fee structures and payments for use or acquisition of the dataset. Legal constraints may impose a number of conditions such as how the dataset may be used, or who may have access to the dataset. When there is uncertainty about conditions, it is recommended that the data developer limits dataset access and use to internal staff or selected, relevant individuals. Access constraint issues should ultimately be resolved through an organisation's legal channels or consults.
Examples:	None. Each organisation must determine which condition applies to the access constraints. This is done through internal consultation with the responsible parties or legal consul.
Entity Name:	ACCESS AND USE CONSTRAINTS
Element Name:	ACCESS DETAILS
Identifier:	62
Definition of Entity:	Not Applicable
Definition of Element:	Description of the restrictions and legal prerequisites for accessing the dataset.
Obligation:	(O) Optional. <i>Access Details element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(N) Multiple number of <i>Access Details</i> entries permitted for this element.
Data Type:	Character String

Domain:	Free Text
Comments:	This element states the details surrounding the conditions that must be accepted before gaining access to the dataset. These details can often address conditions such as the protection of privacy, security of intellectual property rights, copyright issues, patents and pending patents, trademarks, and other restrictions or limitations that the dataset distributor and/or custodian establish as terms for dataset access. This element may also instruct the potential user on the procedures and steps needed to fulfil the requirements embodied in the access details that are presented in this element's field. It may also include other contact information that directs the user to licensing departments or other internal departments or agencies that handle these affairs.
Examples:	None. These guidelines cannot provide examples of access detail statements. Each organisation must establish and write its own access details statements through internal consultation with the responsible parties or legal consul.
Entity Name:	ACCESS AND USE CONSTRAINTS
Element Name:	USE CONSTRAINTS
Identifier:	63
Definition of Entity:	Not Applicable
Definition of Element:	Restrictions and legal prerequisites on using the dataset after access is granted. These include any access constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on obtaining the dataset.
Obligation:	(O) Optional. <i>Use Constraints element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(1) Once. No more than one <i>Use Constraints</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text or "Not Known"
Comments:	This element expands on the details surrounding the issue of restrictions and prerequisites of a dataset after access has been granted. It can also state disclaimers and liabilities associated with the use of the dataset.

Examples:	None. These guidelines cannot provide examples of access detail statements. Each organisation must establish and write its own use constraint statements through internal consultation with the responsible parties or legal consul.
Entity Name:	METADATA CREATOR
Element Name:	Not Applicable
Identifier:	G8 (Element Group 8)
Definition of Entity:	The organisation or person responsible for the last update of the metadata.
Definition of Element:	Not Applicable
Obligation:	(M) Mandatory. This entity contains elements that require information.
Maximum Occurrence:	(1) Dataset information may be recorded only once at the METADATA CREATOR entity level. This rule applies only to the element group as a whole and not each element. Each element has a separate condition or rule for the number of occurrences permitted.
Data Type:	Metadata Entity for Element Group 8
Domain:	Not Applicable
Comments:	The following eight terms form part of the group of elements listed under the metadata entity (METADATA CREATOR): 64) <i>Name of Metadata Creator;</i> 65) <i>Full Postal Address of Metadata Creator;</i> 66) <i>Postcode of Metadata Creator;</i> 67) <i>Telephone Number of Metadata Creator;</i> 68) <i>Facsimile Number of Metadata Creator;</i> 69) <i>Email Address of Metadata Creator;</i> 70) <i>Web Address of Metadata Creator;</i> 71) <i>Metadata Last Updated.</i>
Examples:	Not Applicable
Entity Name:	METADATA CREATOR

Element Name:	NAME OF METADATA CREATOR
Identifier:	64
Definition of Entity:	Not Applicable
Definition of Element:	The name of the organisation or person responsible for the metadata and their updates.
Obligation:	(M) Mandatory. The <i>Name of Metadata Creator element</i> must have information entered in its field.
Maximum Occurrence:	(1) Once. No more than one <i>Name of Metadata Creator</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	If an organisation's name is listed, please provide both its full name and associated acronyms (without full stops). Please place any acronyms between parentheses. If providing the name of a person, please include, in this order, her/his surname, given name and job title. If preferable, please list the job title of the responsible person. Listing only the job title eliminates the need to update this field in the event staff departures, internal transfers and the changes in the roles of staff members.
Examples:	Individuals: 1) Professor Doe, Jane 2) Dr Doe, Jane 3) Ms Doe, Jane 4) Miss Doe, Jane 5) Mrs Doe, Jane 6) Doe, Mary Jane 7) Doe, M Jane 8) Doe, Jane 9) Mr Doe, John Job Title: 1) GIS Manager 2) Lecturer 3) Service Co-ordinator 4) Data and Support Officer

	5) Professor of Geography 6) Information Officer 7) PhD Graduate Student of History 8) Reader in Urban Planning 9) Statistician Organisations: 1) UK Data Archive (UKDA), University of Essex 2) EDINA, University of Edinburgh 3) Department of Geography, University of Edinburgh 4) Institute for Labour Research, University of Essex
Entity Name:	METADATA CREATOR
Element Name:	FULL POSTAL ADDRESS OF METADATA CREATOR
Identifier:	65
Definition of Entity:	Not Applicable
Definition of Element:	Postal address of the organisation or person responsible for the metadata, including organisation name, building name and/or number, street name, city, county and country.
Obligation:	(M) Mandatory. The <i>Full Postal Address of Metadata Creator element</i> must have information entered in its field.
Maximum Occurrence:	(1) Once. No more than one <i>Full Postal Address of Metadata Creator</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	The full postal address should include the following: • The organisation's name; • The building name and/or number; • The street name; • City or town; • County (if available); • Country and/or nation's name. For the British Isles, this can also include England, Northern

	Ireland, Scotland, Wales, United Kingdom, Channel Isles, Isle of Man, or the Republic of Ireland. Other country names may be entered if metadata creator lives outside of any of the stated nations or countries listed in brackets.
Examples:	1) Department of Geography, University of United Kingdom, Building A, 123 High Street, Colchester, Essex, United Kingdom
Entity Name:	METADATA CREATOR
Element Name:	POSTAL CODE OF METADATA CREATOR
Identifier:	66
Definition of Entity:	Not Applicable
Definition of Element:	Postal code part of the address.
Obligation:	(M) Mandatory. The <i>Postal Code of Metadata Creator element</i> must have information entered in its field.
Maximum Occurrence:	(1) Once. No more than one <i>Postal Code of Metadata Creator</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	Enter the complete postal code for the contact organisation or person.
Examples:	1) CO1 1UB 2) EH8 9LJ 3) BT7 1NN 4) CF10 3YE 5) W9 3NN
Entity Name:	METADATA CREATOR

Element Name:	TELEPHONE NUMBER OF METADATA CREATOR
Identifier:	67
Definition of Entity:	Not Applicable
Definition of Element:	Telephone number by which individuals can talk to the organisation or person responsible for metadata updates.
Obligation:	(O) Optional. <i>Telephone Number of Metadata Creator element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(1) Once. No more than one <i>Telephone Number of Metadata Creator</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	The international format should be used for listing the telephone number. This includes the plus sign (+) followed by the United Kingdom's country code, the area code (with the zero in brackets), and the number.
Examples:	1) +44 (0) 123 456 789
Entity Name:	METADATA CREATOR
Element Name:	FACSIMILE NUMBER OF METADATA CREATOR
Identifier:	68
Definition of Entity:	Not Applicable
Definition of Element:	Facsimile number which individuals can use to contact the organisation or person responsible for the metadata.
Obligation:	(O) Optional. <i>Facsimile Number of Metadata Creator element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(1) Once. No more than one <i>Facsimile Number of Metadata Creator</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text

Comments:	The international format should be used for listing the telephone number. This includes the plus sign (+) followed by the United Kingdom's country code, the area code (with the zero in brackets), and the number.
Examples:	1) +44 (0) 123 456 789
Entity Name:	METADATA CREATOR
Element Name:	EMAIL ADDRESS OF METADATA CREATOR
Identifier:	69
Definition of Entity:	Not Applicable
Definition of Element:	Internet email address which individuals can use to contact the organisation or person responsible for metadata updates.
Obligation:	(O) Optional. <i>Email Address of Metadata Creator</i> element does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(1) Once. No more than one <i>Email Address of Metadata Creator</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	The email address should be associated with the contact name or organisation that is listed under the Contact Name element (identifier 63); however, as recommended there, it is preferable to provide an email address that is associated with a job title, an organisation or an internal department. This will reduce the need to provide metadata updates any time there is a change in the staff responsible for metadata.
Examples:	1) anyone@university.ac.uk
Entity Name:	METADATA CREATOR
Element Name:	WEB ADDRESS OF METADATA CREATOR
Identifier:	70
Definition of Entity:	Not Applicable

Definition of Element:	Metadata creator's World Wide Web site Uniform Resource Locator (URL) address.
Obligation:	(O) Optional. <i>Web Address of Metadata Creator element</i> does not require information to be entered in its field, but it is recommended if applicable.
Maximum Occurrence:	(1) Once. No more than one <i>Web Address of Metadata Creator</i> entry permitted for this element.
Data Type:	Character String
Domain:	Free Text
Comments:	This element provides the URL address for the metadata creator organisation's web site. The URL address may link to the home page, the responsible internal department, or a page that contains additional information about the organisation's metadata. Please include the leading code, which is most usually http:// for web addresses.
Examples:	1) http://www.metadata-creator.ac.uk/
Entity Name:	METADATA CREATOR
Element Name:	METADATA LAST UPDATED
Identifier:	71
Definition of Entity:	Not Applicable
Definition of Element:	Date on which the metadata were created or last updated.
Obligation:	(M) Mandatory. The <i>Metadata Last Updated element</i> must have information entered in its field.
Maximum Occurrence:	(1) Once. No more than one <i>Metadata Last Updated</i> entry permitted for this element.
Data Type:	Date
Domain:	YYYY-MM-DD

Comments:	When a metadata data file has been created and completed or an existing one updated, the date of that occurrence must be entered in this element's field. If possible, please enter the date to the day. If unknown, enter the month and year or, if the month is not known, enter only the year. The date format is based on ISO 8601, which is expressed as YYYY-MM-DD (Year-Month-Day), and uses hyphens "-" as separators. It is based on the <i>Gregorian Calendar</i> but denoted using the "<i>Common Era Calendar</i>" format.
Examples:	1) 2002-01-31 (Complete date known, including year, month and day) 2) 2002-01 (Year and month of date known, but not day) 3) 2002 (Year known, but not month and day)

3.0 Appendix A

HE/FE Metadata Application Profile for Go-Geo!

Group			Identifier	Go-Geo! Metadata Element and Entity Names	Go-Geo! Definition	Obligation	Maximum Occurrence	Data Type	Domain
G1 CITATION			G1	CITATION	Dataset Reference Information	Mandatory	N	Metadata Entity Group 1	
			1	Title	The name by which the dataset is known.	Mandatory and Searchable	1	Character String	Text
			2	Alternative Title	Short name, other name, acronym or alternative language title.	Optional	N	Character String	Text
			3	Creator	Organisation or person that developed the dataset and has primary responsibility for the intellectual content of the dataset.	Mandatory and Searchable	N	Character String	Text
			4	Identifier	A unique string or number used to identify the dataset.	Optional	1	Character String	Text
			5	Edition	The number of the edition of the dataset.	Mandatory	1	Character String	Text
			G2	IDENTIFICATION INFORMATION (WHAT)	Basic Information about the dataset	Mandatory	N	Metadata Entity Group 2	

G2_IDENTIFICATION INFORMATION (WHAT)						
6	Topic	Main theme(s) of the dataset.	Mandatory and Searchable	N	Enumerated List	Farming Biota Boundaries Climatology/Meteorology/Atmosphere Economy Elevation Environment Geo-scientific Information Health Imagery/Base Maps/Earth Cover Intelligence/Military Inland Waters Location Oceans Planning/Cadastre Society Structure Transportation Utilities/Communication
7	Controlled Vocabulary	Name of the controlled vocabulary used as a source for the controlled keywords.	Mandatory	1	Character String	UNESCO Thesaurus
8	Controlled Keywords	Keywords taken from a controlled vocabulary summarising the subject of the dataset.	Mandatory and Searchable	N	Enumerated List	Search UNESCO for term(s)
9	Other Keywords	Other words or phrases summarising the subject of the dataset.	Optional and Searchable	N	Character String	Text
10	Controlled Place Name Vocabulary	Name of the controlled vocabulary used as a source for the controlled place name keywords.	Optional and Searchable	1	Character String	Getty or Ordnance Survey
11	Controlled Place Name Keywords	The geographic name of a location(s) covered by a dataset.	Optional and Searchable	N	Enumerated List	Search Getty or Ordnance Survey 1: 50,000 Gazetteer for term(s)
12	Description	A brief description of the dataset. This should include some explanation as to why the dataset was produced and how it has been used since its creation.	Mandatory and Searchable	1	Character String	Text
13	Quality	A general assessment of the quality of a dataset for determining its fitness for use. Quality is stated in terms of accuracy, completeness, and consistency for both the data and the dataset.	Optional	1	Character String	Text
14	Language	The language(s) used within the dataset.	Mandatory	N	Enumerated List	English Gaelic Welsh
15	Further Information	Source of further information about the dataset.	Optional	N	Character String	Text
16	Related Dataset	Information about other, related datasets of a similar theme or derived from a common source, which may be of interest to the user.	Optional	N	Character String	Text

	G2.sg1	SPATIAL REFERENCE SYSTEM	SPATIAL REFERENCE SYSTEM	Name or description of the spatial referencing system used within the dataset, which may be based on co-ordinates e.g. British National Grid, Irish National Grid, latitude and longitude or geographic identifiers e.g. postcodes, postal addresses, administrative units, or countries.	Mandatory	N		
			17	Co-ordinate System	Conditional/ Mandatory If Geographic Identifier not used.	N	Character String	Text
			18	Geographic Identifiers	Conditional/ Mandatory If Co-ordinate System not used.	N	Character String	Text
			G2.sg2	LEVEL OF SPATIAL DETAIL	Optional/ Enter values for Source Scale Denominator or Raster Cell/Pixel Size X and Y Values or Smallest Administrative Unit.	1	Metadata Entity subgroup 2	
	19		Source Scale Denominator	Denominator of the representative fraction on the source map(s) (e.g. on a 1:50000 scale map, the source scale denominator is 50000). If no source map used, enter 0. If multiple source map scales were used, enter the Source Scale Denominator of the smallest scale map (largest denominator).	Optional	1	Character String	Text
			20	Imagery or Grid Raster Cell/Pixel Size (X-Value)	The column width of a raster cell expressed in distance units of measure.	1	Character String	Text
			21	Imagery or Grid Raster Cell/Pixel Size (Y-Value)	The row height of a raster cell expressed in distance units of measure.	1	Character String	Text

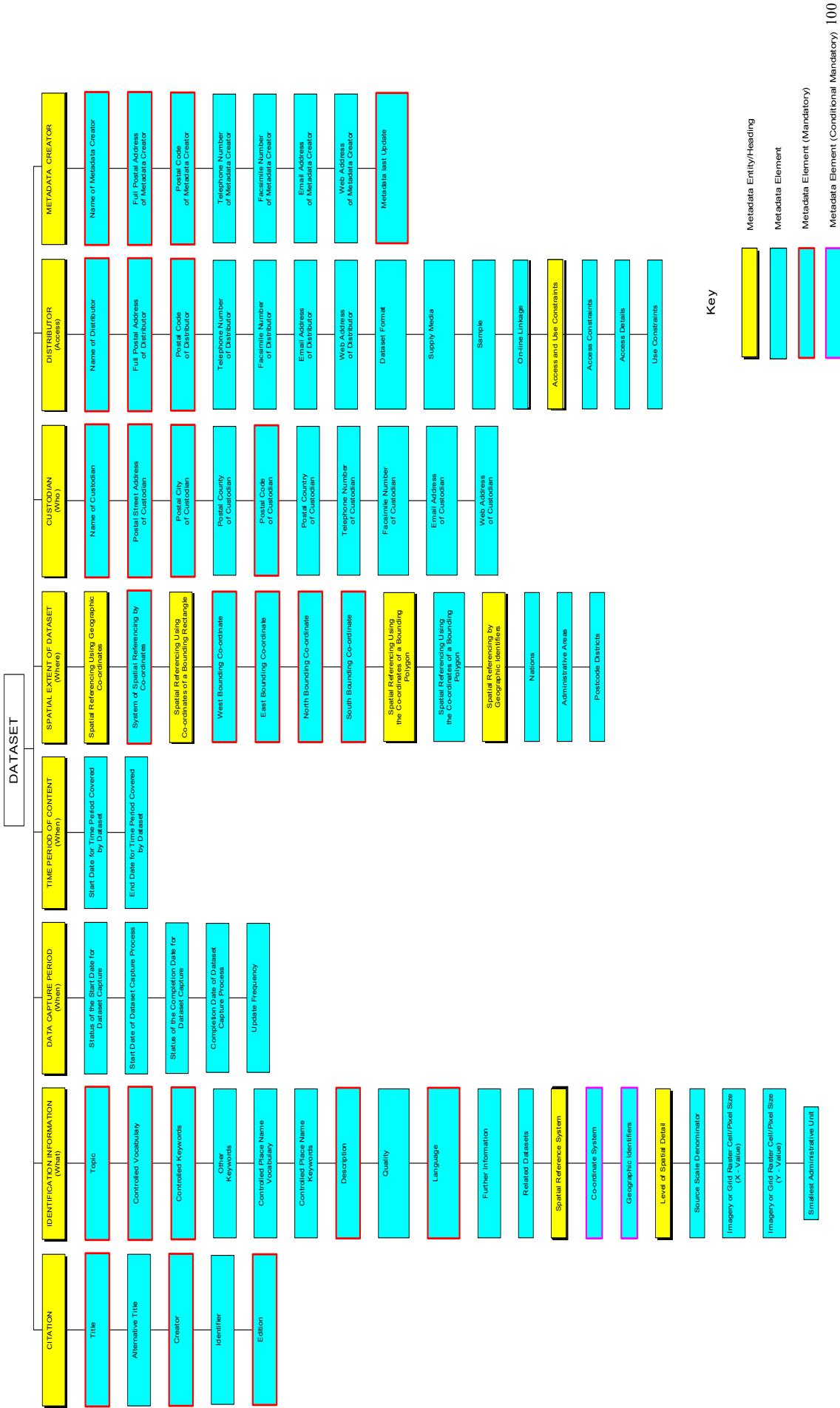
G4 TIME PERIOD COVERED BY	G4	TIME PERIOD COVERED BY DATASET (WHEN)		Time period the dataset covers. This should only be completed if different from the data capture period.	Optional	N	Metadata Entity Group 4	
		Start Date for Time Period Covered by Dataset		The start date of the actual time period the dataset covers.	Optional	N	Date	Date
		End Date for Time Period Covered by Dataset		The end date of the actual time period the dataset covers.	Optional	N	Date	Date
G5 SPATIAL EXTENT OF DATASET (WHERE)	G5	SPATIAL EXTENT OF DATASET (WHERE)		The geographic coverage of the dataset expressed in terms of geographic identifiers (e.g. nations, administrative areas, or postcode districts) or geographic co-ordinates.	Mandatory	1	Metadata Entity Group 5	Any combination of the following three geographic coverage referencing options may be used, but bounding rectangle must be used.
		SPATIAL REFERENCING USING GEOGRAPHIC CO-ORDINATES		The geographic coverage of the dataset expressed in terms of geographic co-ordinates of a bounding rectangle or bounding polygon.	Mandatory	N	Metadata Entity Group 5 subgroup 1	
		System of Spatial Referencing by Co-ordinates		Name of the spatial reference system used for the geographic co-ordinates.	Mandatory	1	Enumerated List	British National Grid, Irish Grid, Latitude and Longitude
	G5 sg1-a	SPATIAL REFERENCING USING CO-ORDINATES OF A BOUNDING RECTANGLE		The geographic coverage of the dataset expressed in terms of geographic co-ordinates of a bounding rectangle.	Mandatory	N	Metadata Entity Group 5 subgroup 1-a	Enter either Grid or Longitude and Latitude values, but not both.
		West Bounding Co-ordinate		Westernmost co-ordinate of a bounding rectangle.	Mandatory	1	Real	Grid value/ Longitude
		East Bounding Co-ordinate		Easternmost co-ordinate of a bounding rectangle.	Mandatory	1	Real	Grid value/ Longitude
		North Bounding Co-ordinate		Northernmost co-ordinate of a bounding rectangle.	Mandatory	1	Real	Grid value/ Latitude
		South Bounding Co-ordinate		Southernmost co-ordinate of a bounding rectangle.	Mandatory	1	Real	Grid value/ Latitude

		G5.sg1-b	SPATIAL REFERENCING USING CO-ORDINATES OF A BOUNDING POLYGON	The geographic coverage of the dataset expressed in terms of geographic co-ordinates of a bounding polygon.	Optional	N	Metadata Entity Group 5 subgroup 1-b	
			Bounding Polygon	The set of x,y co-ordinates (first number = easting of a point, second number = northing of a point) that make up the bounding polygon.	Optional	N	Character String	Text
			G5.sg2	Geographic coverage expressed in terms of geographic identifiers	Optional	1	Metadata Entity Group 5 subgroup 2	Any of the National, Administrative Area, or Postcode District geographic identifiers may be used.
	GEOGRAPHIC IDENTIFIERS	36	Nations	Geographic coverage expressed in terms of nations within the British Isles.	Optional	N	Enumerated List	England Northern Ireland Scotland Wales Isle of Man Channel Islands United Kingdom Republic of Ireland
			Administrative Areas	Geographic coverage expressed in terms of administrative areas.	Optional	N	Enumerated List	List of Administrative Areas
			Postcode Districts	Geographic coverage expressed in terms of postcode districts.	Optional	N	Enumerated List	List of Postcode Districts
G6_CUSTODIAN		G6	CUSTODIAN	The organisation or person responsible for the maintenance of the dataset.	Mandatory	1	Metadata Entity Group 6	
		39	Name of Custodian	The name of the organisation or person responsible for the maintenance of the dataset.	Mandatory	1	Character String	Text
		40	Postal Street Address of Custodian	Postal Street part of address for organisation or person responsible for the maintenance of the dataset.	Mandatory	1	Character String	Text
		41	Postal City of Custodian	Postal city part of address for organisation or person responsible for the maintenance of the dataset.	Mandatory	1	Character String	Text
		42	Postal County of Custodian	Postal county part of address for organisation or person responsible for the maintenance of the dataset.	Optional	1	Character String	Text
		43	Postal Code of Custodian	Postal code part of address for organisation or person responsible for the maintenance of the dataset.	Mandatory	1	Character String	Text

	44	Postal Country of Custodian	Postal country part of address for organisation or person responsible for the maintenance of the dataset.	Mandatory	1	Character String	Text
	45	Telephone Number of Custodian	Telephone number by which individuals can talk to the organisation or person responsible for the maintenance of the dataset.	Optional	1	Character String	Text
	46	Facsimile Number of Custodian	Facsimile number which individuals can use to contact the organisation or person responsible for the maintenance of the dataset.	Optional	1	Character String	Text
	47	Email Address of Custodian	Internet Email address which individuals can use to contact the organisation or person responsible for the maintenance of the dataset.	Optional	1	Character String	Text
	48	Web Address of Custodian	Custodian's World Wide Web site Uniform Resource Locator (URL) address.	Optional	1	Character String	Text
G7_DISTRIBUTOR (ACCESS)	G7	DISTRIBUTOR (ACCESS)	The organisation or person responsible for the distribution of the dataset.	Mandatory	N	Metadata Entity Group 7	
	49	Name of Distributor	The name of the organisation or person from whom the dataset may be obtained.	Mandatory	1	Character String	Text
	50	Full Postal Address of Distributor	Postal address for the dataset distributor including organisation name, building name or number, street name, city, county and country.	Mandatory	1	Character String	Text
	51	Postal Code of Distributor	Postal code part of address.	Mandatory	1	Character String	Text
	52	Telephone Number of Distributor	Telephone number by which individuals can talk to the organisation or person.	Optional	1	Character String	Text
	53	Facsimile Number of Distributor	Facsimile number which individuals can use to contact the organisation or person.	Optional	1	Character String	Text
	54	Email Address of Distributor	Internet Email address which individuals can use to contact the organisation or person.	Optional	1	Character String	Text
	55	Web Address of Distributor	Distributor organisation's World Wide Web site Uniform Resource Locator (URL) address.	Optional	1	Character String	Text

4.0 Appendix B

Graphical Diagram of FE/HE Metadata Application Profile



5.0 Appendix C

Overview of Examples Support Document for the FE/HE Metadata Application Guidelines

This document is intended to serve as a supplement to the FE/HE Metadata Application Guidelines. It is to serve metadata creators and Go-Geo! Portal users as an additional resource for presenting lucid and numerous examples to explain better some FE/HE elements.

Where appropriate, examples will be listed under several academic disciplines that are likely to use or create geo-spatial datasets. These include the following:

- Archaeology and Anthropology;
- Biological Sciences;
- Civil Engineering;
- Earth Sciences;
- Environmental Sciences;
- Geography, Health Sciences;
- History and Sociology.

In addition, some continuity will be imposed on many of the examples presented in this document. Common themes have been applied across examples so that comparisons can be made, thus further expanding examples in a greater context to provide more clarity. The title example, *A Study of the Distribution Pattern of Iron Age Sites in South-eastern England*, represents a theme that can be seen also in alternative title, topic, description and other elements. In all instances, fictitious examples have been used. Any examples that might exist would be coincidental.

List of Title examples presented under various academic disciplines (Title element, Identifier 1) ([return to p12](#))

Archaeology and Anthropology

- 1) A study of the distribution pattern of Iron Age archaeological sites in south-eastern England
- 2) Results of a resistivity and gradiometer geophysical survey conducted at a Neolithic site on Brown's Farm in Wiltshire, England

Biological Sciences

- 1) Population densities of hedgehogs across Great Britain
- 2) The incidence of ink disease amongst sessile Oak in Scotland

Civil Engineering

- 1) An Inventory of wind-powered generators across the United Kingdom
- 2) Map of ground control point locations for United Kingdom surveyors

Earth Sciences

- 1) Digital elevation model (DEM) map for Wales
- 2) The distribution of sandstone-based loamy soils of the Upper Thames Valley in Berkshire, England

Environmental Sciences

- 1) The study of well water contamination and point source pollution across the United Kingdom
- 2) The incidence of coastal erosion in densely populated areas across eastern England

Geography

- 1) A landsat satellite-based 1995 land-use classification map for Essex, England
- 2) Scottish output area boundaries from the 1991 census
- 3) Panchromatic air photo map of Llandegai, near Bangor, Gwynedd

Health Sciences

- 1) The incidence of smoke-related cancers amongst women in Aberdeenshire, Scotland from 1980 to 2002
- 2) Long-term health effects associated with beer consumption. A controlled study of population groups in the City of Glasgow, Scotland from 1950 to 1990

History

- 1) Demographic and occupational data for Northern Ireland from 1901 to 1910
- 2) Examining changes to parish boundaries in Scotland during the nineteenth century

Sociology

- 1) Drugs and crime in the urban setting: A trend analysis for urban areas across the United Kingdom, 1995 to 2000
- 2) A study of cultural perceptions of environmental risks in the United Kingdom

List of Alternative Title examples presented under various academic disciplines ([return to p12](#))
(**Alternative Title** element, Identifier 2)

Archaeology and Anthropology

- 1) Iron Age settlement patterns in south-eastern England
- 2) Brown's Farm geophysical survey in Wiltshire, England

Biological Sciences

- 1) Population densities of hedgehogs (*Erinaceus europaeus*) across Great Britain
- 2) Ink disease amongst sessile oak/darach (*Quercus petraea*) in Scotland

Civil Engineering

- 1) An inventory of WPGs across the UK
- 2) Map of GCP locations in the UK

Earth Sciences

- 1) DEM map for Wales
- 2) Mapped sandstone-based loamy soils of the Upper Thames Valley in Berkshire

Environmental Sciences

- 1) Well water contamination and pollution sources across the UK
- 2) Erosion impact on eastern English coastline communities

Geography

- 1) Essex: A 1995 land-use classification map
- 2) Scottish OAs
- 3) Map o awyrlun o Landygái, ger Bangor, Gwynedd

Health Sciences

- 1) Smoke-related cancer cases amongst female cohorts in Aberdeenshire, Scotland from 1980 to 2002
- 2) Long-term effects of beer consumption. Results from a Glasgow, Scotland study conducted from 1950 to 1990

History

- 1) Early 20th century demographic and occupational data for Northern Ireland
- 2) Parish boundary changes of the 19th century in Scotland

Sociology

- 1) A trend analysis study on drugs and crime in urban areas across the UK
- 2) Cultural perceptions of environmental risks in the UK

List of Subject Topics and Definitions
(**Topic**, Identifier 6)

[\(return to p18\)](#)

Please use the appropriate topic from the left-hand column (titled “**Name**”)

	Name	Definition
1.	Farming	Rearing of animals and/or cultivation of plants. [Agriculture; Irrigation; Aquaculture; Plantations; Herding; Pests and Diseases affecting Crops and Livestock]
2.	Biota	Flora and/or fauna in natural environment. [Wildlife; Vegetation; Biological Sciences; Ecology; Wilderness; Sea Life; Wetlands; Habitat]
3.	Boundaries	Legal land descriptions. [Political and Administrative Boundaries]
4.	Climatology/ Meteorology/ Atmosphere	Processes and phenomena of the atmosphere. [Cloud cover; Weather; Climate; Atmospheric conditions; Climate change; Precipitation]
5.	Economy	Economic activities, conditions and employment. [Production; Labour; Revenue; Commerce; Industry; Tourism and Eco-tourism; Forestry; Fisheries; Commercial or Subsistence Hunting; Exploration and Exploitation of Resources such as Minerals; Oil and Gas]
6.	Elevation	Height above or below sea level. [Altitude; Bathymetry; Digital Elevation Models (DEMs); Slope Derived Products]
7.	Environment	Environmental resources, protection and conservation. [Environmental pollution; Waste Storage and Treatment; Environmental Impact Assessment; Monitoring Environmental Risk; Nature Reserves; Landscape]
8.	Geo-scientific Information	Information pertaining to earth sciences. [Geophysical Features and Processes; Geology; Minerals; Sciences dealing with the Composition, Structure and Origin of the Earth's Rocks; Risks of Earthquakes; Volcanic Activity; Landslides; Gravity Information; Soils; Permafrost; Hydrogeology; Erosion]
9.	Health	Health, health services, human ecology and safety. [Disease and Illness; Epidemiology; Factors affecting Health; Hygiene; Substance Abuse; Mental and Physical Health; Health Services]
10.	Imagery, Base Maps, Earth Cover	Base maps. [Land Cover; Topographic Maps; Imagery; Unclassified Images; Annotations]
11.	Intelligence, Military	Military bases, structures and activities. [Barracks; Training Grounds; Military Transportation; Information Collection]

	Name	Definition
12.	Inland Waters	Inland water features, drainage systems and their characteristics. [Rivers and Glaciers; Salt Lakes; Water Utilisation Plans; Dams; Currents; Floods; Water Quality; Hydrographic Charts]
13.	Location	Positional information and services. [Addresses; Geodetic Networks; Control Points; Postal Zones and Services; Place Names]
14.	Oceans	Features and characteristics of salt water bodies (excluding inland waters). [Tides; Tidal Waves; Coastal Information; Reefs]
15.	Planning, Cadastre	Information used for appropriate actions for future use of the land. [Land-use maps; zoning maps; cadastral surveys; land ownership]
16.	Society	Characteristics of society and cultures. [Settlements; Anthropology; Archaeology; Education; Traditional Beliefs; Manners and Customs; Demographic Data; Recreational Areas and Activities; Social Impact Assessments; Crime and Justice; Census Information]
17.	Structure	Man-made construction. [Buildings; Museums; Churches; Factories; Housing; Monuments; Shops; Towers]
18.	Transportation	Means and aids for conveying persons and/or goods. [Roads; Airports/Airstrips; Shipping Routes; Tunnels; Nautical Charts; Vehicle or Vessel Location; Aeronautical Charts; Railways]
19.	Utilities, Communication	Energy, water and waste systems and communications infrastructure and services. [Hydroelectricity; Geothermal; Solar and Nuclear Sources of Energy; Water Purification and Distribution; Sewage Collection and Disposal; Electricity and Gas Distribution; Data Communication; Telecommunication; Radio; Communication Networks]

List of Controlled Keyword examples presented under various academic disciplines ([return to p20](#))
(**Controlled Keyword** element, Identifier 8)

(Terms selected from UNESCO thesaurus)

Archaeology and Anthropology

- 1) Archaeology, Archaeological Sites, Ancient History, Antiquity, Iron Age, Settlement Patterns, Commerce, Landscape, Trade, Maps
- 2) Archaeology, Archaeological Sites, Ancient History, Antiquity, Neolithic Age, Physics, Geophysical Prospecting, Surveys, Field Work

Biological Sciences

- 1) Biology, Animal Biology, Biological Research, Zoology, Ecosystems, Population Density, Fauna, Animals, Mammals, Pest Control, Maps
- 2) Biology, Plant Biology, Botany, Biological Research, Ecosystems, Biological Control, Trees, Plant Diseases, Vegetation Maps

Civil Engineering

- 1) Civil Engineering, Natural Resources, Renewable Energy Sources, Winds, Wind Power, Maps
- 2) Civil Engineering, Surveying, Surveys, Geodesy, Maps, Satellites

Earth Sciences

- 1) Topography, Models, Maps
- 2) Soils, Soil Surveys, Soil Maps, Rocks, Sedimentary Rocks,

Environmental Sciences

- 1) Hydrology, Drinking Water, Wells, Aquifers, Ground Water, Water Resources, Water Supply, Water Treatment, Environmental Health, Pollution, Water Pollution, Soil Pollution, Agricultural Waste, Contaminates, Waste, Lead, Water Treatment
- 2) Erosion, Coastal Erosion, Soil Erosion, Coastal Zones, Landslides, Damage, Harbor and Coastal Engineering, Human Activities Effects, Communities, Houses, Urban Development

Geography

- 1) Remote Sensing, Land use, Maps, Satellites
- 2) Boundaries, Population Censuses, Statistical Data, Demography
- 3) Aerial Photography, Maps

Health Sciences

- 1) Health, Women, Diseases, Cancer, Smoking, Death, Mortality, Everyday Life, Cultural Life, Working Life, Smoking, Diet, Social Stratification, Population, Females, Environmental Health, Contaminates

- 2) Health, Alcoholic Beverages, Beer, Addiction, Mortality, Quality of Life, Group Size, Target Groups

History

- 1) Social History, Demographic Statistics, Population Censuses, Population Dynamics, Age Groups, Birth Rate, Mortality, Life Expectancy, Nuptiality, Immigration, Emigration, Employment, Occupations, Social Status, Agriculture, Agroforestry, Fishing Industry, Industry, Manufacturing Industry
- 2) Social History, Political History, Boundaries

Sociology

- 1) Crime, Drug traffic, Youth Unrest, Social Problems, Domestic Violence, Addiction, Drug Abuse, Urban Population, Urban Sociology, Urban Youth, Heroin, Cocaine
- 2) Risk Assessment, Environmental Awareness, Cultural Behaviour, Perception, Cultural Identity, Ethno-Psychology, English, Welsh, Natural Disasters, Landslides, Earthquakes, Floods, Storms, Global Warming, Ozone, Hazardous Materials, Nuclear Wastes, Radioactive Wastes, Environmental, Endangered Species

List of Other Keyword examples presented under various academic disciplines ([return to p21](#))
(**Other Keyword** element, Identifier 9)

(Terms without a thesaurus source)

Archaeology and Anthropology

- 1) Celts, Romans, Hillforts, Enclosures, Point Coverage
- 2) Geophysical Survey, Gradiometer, Magnetometer, Resistivity, Resistance, Magnetics, Anomalies, Raster Images, GPS, Global Positioning System, GPR, Ground Penetrating Radar

Biological Sciences

- 1) Hedgehogs, Shrews, Moles
- 2) Oak, Sessile Oak, Ink Disease

Civil Engineering

- 1) Wind Turbines, Coriolis Force, Anemometers, Wind Shear, Prevailing Wind Direction, Sea Winds, Electrical Grid, Megawatt
- 2) Ground Control Points, GCP, Global Positioning System, GPS

Earth Sciences

- 1) Digital Elevation Model, DEM, Digital Terrain Model, DTM, Raster Grid, Elevation
- 2) Loam, Sandstone, Polygon Coverage

Environmental Sciences

- 1) Micro-organisms, Coliforms, Chlorine, Inorganic Chemicals, Arsenic, Asbestos, Copper, Organic Chemicals, Nitrite, Benzene, Atrazine, Clay, Loam, Silt, Sand, Depth, pH, Alkaline, Acidic
- 2) Coastal Defences, Hard Defences

Geography

- 1) Landsat Thematic Mapper 5, Landsat TM 5, Supervised Classification
- 2) Output Areas, Scottish
- 3) Air Photos, Panchromatic

Health Sciences

- 1) Lung Cancer, Oesophageal Cancer, Breast Cancer, Chemotherapy, Treatment, Cigarettes, Packs, Cohorts, Hazardous Chemicals
- 2) Pints, Litres, Treatment, Health Benefits, Health Risks, Cohorts

History

- 1) Borough, County, Forestry, Fishing, Fishing, Death Rate, Marriage Rate
- 2) Scottish, Parish, Registration Districts

Sociology

- 1) Burglary, Robbery, Overdose Rate, Relapse Rate, Cure Rate
- 2) Northern Irish, Scottish, Tornadoes, Ozone Depletion, Hazardous Waste Sites

List of Description examples presented under various academic disciplines ([return to p24](#))
(**Description** element, Identifier 12)

Archaeology and Anthropology

This dataset is a point coverage showing the distribution pattern of Iron Age sites in south-eastern England. This dataset was created as part of another study at the University of Essex that examines commercial and trade networks between Roman and the indigenous populations situated in this region. The study area is restricted to the counties of Kent, East and West Sussex and Surrey. Data collection is quite extensive for this area and was derived from various field surveys conducted over intermittent periods from 1922 to 1995.

The point coverage includes 188 sites that are associated with indigenous and Roman populations. Attribute information for the point coverage includes site occupation dates, site types, material culture and site size.

Biological Sciences

This dataset was created as part of a University of Essex Department of Zoology's study to assess population densities of hedgehogs across Great Britain and examine their impact on local bird populations. The study areas include England, Scotland and Wales.

Teams of research students, in groups of ten, were sent across Britain during the summers of 1996 to 1997 to observe and collect hedgehog population counts. A grid system map layer using 30 x 30 kilometre cells was imposed as part of the collection strategy. A locational map layer was also generated as an aid for field teams to use for navigation. In addition, a Landsat satellite image was processed to create a land classification map that revealed potential habitat areas for hedgehogs. The Landsat-derived map was superimposed as a layer over the grid and locational maps with the three being merged together. In addition to these maps, the research teams used global positioning system technology (GPS) to navigate their way in the field and locate the hedgehog habitat areas.

Subsequently, the population data were collected and used to generate a polygon feature coverage, which presented estimated hedgehog population densities across Britain.

Civil Engineering

This dataset represents an inventory of wind-powered generators across the United Kingdom. The study area includes England, Northern Ireland, Scotland and Wales and is part of an effort to assess current and future placement of generators. The survey was conducted in 1994. The aim of the inventory is to collect data and assess the current state of turbine facility installations and electrical grid infrastructure in the United Kingdom. The results of this study will be used for planning future wind turbine facilities. These results will examine the correlations between wind turbines and design and prevailing wind patterns.

Global positioning system technology (GPS) was used to collect co-ordinates and elevations for each generator station. These co-ordinates were later converted to a point coverage, which included attribute information about each generator station. This included station orientation, turbine blade sizes, electrical output, years in service and shutdown periods.

Earth Sciences

The Digital Elevation Model (DEM) Map for Wales represents a three-dimensional (3-D) elevation model, which covers the entire nation of Wales. This DEM is converted into a raster grid cell format and was derived from scanned 1997 aerial photographs of Wales. The DEM's grid cell resolution is 30 x 30 metres and this can be suitable for generating slope, aspect, watershed and viewshed models and elevation contour maps. These can be combined with other raster and vector datasets to generate slope stability and landslide probability maps, water runoff models and visibility assessment models. Two-dimensional

aerial photographs and satellite images can also be draped over the Wales DEM to create a 3-D visual display to simulate a landscape scene. Some GIS software packages offer tools that can simulate a fly-over across a 3-D scene.

Environmental Sciences

The results of a study in 1996 of well water contamination and source pollution across the United Kingdom included a point coverage dataset for all wells. The purpose of the study was to create an inventory of all abandoned and operational wells across the UK. The total number of wells reached 2,350 in count. Water samples were collected and analysed for organic, inorganic and chemical contaminants. Location of the wells was established through liaisons with local government agencies and locational accuracy was improved with the use of Global positioning system technology (GPS). Coring tests were also conducted to determine soil types and geological maps were referenced to identify the local bedrock.

The results revealed that only 8 percent of the operational wells had various levels of contamination. Sources of pollution contamination were traced and found for almost 80 percent of these wells. Abandoned wells accounted for 76 percent of all wells and of these, 68 percent had various levels of contamination. The pollution source was found for only 22 percent of these wells.

Geography

This 1995 Essex land-use classification dataset is derived from a Landsat 5 Thematic Mapper satellite-based image. The satellite captured the image on the 19th May, 1994 and it was subsequently processed and converted from a raster image to a vector file format.

A supervised classification was performed on the raster imagery and 25 classes were created, which represent various types of land cover. In general, this includes water, arable land, grass and moors, woodlands and urban areas. Once converted to these classes, the raster image was converted into a vector format with each raster class becoming a polygon.

The Essex land-use map can be used for planning and managing resources and monitoring changes to the landscape that occur with land development and effects of natural events.

Health Sciences

A health study was conducted that tracked lung cancer rates amongst women in Aberdeenshire County, Scotland from 1980 to 2002. The study examined age, status, diet, smoking and drinking habits and environmental hazards. It also provides information about cancer and morbidity rates and types of cancers, treatment methods and survival rates.

The dataset holds information collected at the household level across the county. The data have been stored in tabular format and include street address references for those interested in mapping distribution patterns or supplementing other datasets. Specific addresses were not provided to assure individuals' privacy.

History

Census data from 1901 to 1910 were collected for Northern Ireland to examine demographic and occupational trends for this period of time. This is part of another study to examine the political and social changes occurring in Northern Ireland at the turn of the century and just prior to the first world war.

The data are sorted at the county level and stored in a tabular format.

Sociology

This study examines the correlation between drugs and crime in the urban setting across the United Kingdom between 1995 and 2000. The cities of London, Manchester, Birmingham, Glasgow, Belfast and Cardiff were included in the study. Data were collected at the ward level and included drug arrests, drug-related crimes and drug overdoses. These data were stored in tabular format and linked to GIS-based ward boundary files available for each of the cities.

The study also examined treatment programmes and evaluated their success and failure rates. These rates were then compared to changes in drug arrests, drug-related crimes and drug overdoses to determine if there were any correlations between them.

There are several approaches to addressing the Quality of a dataset.

1) This example represents a comprehensive summary on the Quality of the dataset. It covers accuracy, completeness, the lineage (steps to create the dataset), and a general overview of the dataset and its attributes. This next example provides a short, concise overview of the data and dataset associated with an archaeological site survey, and an explanation of the collection and processing steps. It also lists the attribute information, which is useful to provide because the attribute naming conventions tend to use abbreviated or truncated names as presented on this page (Table 1). A potential user may not know what Occ_date represents, so entering this attribute with its actual name and definition assures clarity. Without this explanation, the user may need to contact the data provider and request further information.

Example

The Iron Age settlement dataset (arch_data.dat) was created using a GIS software package. Site locations were captured from published and unpublished survey maps and archaeological reports. There are 188 sites scattered across the counties of Kent, East and West Sussex and Surrey in south-eastern England. Site location accuracies were deemed unreliable due to mapping and surveying methods employed over the past 80 years. Based on this condition, extensive field surveys were conducted to locate the sites. All previously recorded sites were found and identified, and a Global Positioning System (GPS) unit was used to collect co-ordinate readings at the assumed midpoint of each site. The accuracy of each site's midpoint is within plus or minus 10 metres of the true world location. The co-ordinates are based on the British National Grid system.

The GPS co-ordinates were exported as a point coverage file and imported into a GIS. A GIS algorithm was run to generate a point coverage and point attribute table. Attribute names were added to the table. Attribute naming conventions and their definitions and data types are included in the following table:

Table 1. Attribute Names, Definitions and Data Types associated with the arch_data.dat Dataset.

Attribute Name	Attribute Definition	Data Type
Occ_dates	Occupation Dates	Text
Site_type	Site Type	Text
Mat_culture	Material Culture	Text
Site_size	Site Size	Short Integer

The Occupation Dates variable refers to the dates that the site was occupied. The data type is text rather than date. This is due to the inaccurate and inexact nature of the methods used for acquiring dates. Some dates are based on diagnostic material culture and others carbon 14 dating. All 188 sites have dates entered in their Occ_dates field.

The Site Type variable provides a site type value. There are five site type values associated with this dataset and include the following:

- 1) Permanent Settlement;
- 2) Seasonal Settlement;
- 3) Fortification;
- 4) Trading Post;
- 5) Unknown.

There are 16 unknown site types. These are entered as text values in the Site_type fields.

The Material Culture variable represents the cultural affiliation of the site, which is based on artefacts found at the site. The Mat_culture field has text entries of either

- 1) Celt,
- 2) Roman
- 3) Unknown.

All sites have been identified as Roman or Celtic.

The Site_Size variable provides the size of the site in hectares. The value is entered as a short integer in the Site_size field. Site size accuracy is approximate because it is difficult to assess exact extent without extensive excavations. The size is based on field observations, surface surveys and site excavations. No site has been completely excavated, so site size accuracy is problematic until further excavations are conducted at these sites.

With the exception of “Unknown” values for the Material Culture attribute, all attribute information is complete. An assumption can be made that there may be additional Iron Age sites in the study area; therefore, assurances cannot be made that this dataset constitutes all Iron Age sites in Kent, East and West Sussex and Surrey.

List of Related Dataset examples presented under various academic disciplines ([return to p28](#))
(**Related Dataset** element, Identifier 16)

It is recommended that the author-date system (or sometimes called the “Harvard System”) format be used for citations. Examples are also provided for various types of material or media and can be applied to all disciplines.

Archaeology and Anthropology

(Journal)

- 1) Doe, J. (1936). A 1935 survey of Iron Age sites in Kent, England. *Journal of Iron Archaeology*, 2, 33-43.
- Doe, E. (1938). A 1936 survey of Iron Age sites in Surrey, England. *Journal of Iron Archaeology*, 4, 21-46.

(Edited Contribution)

Doe, L. (1939). A 1937 survey of Iron Age sites in East and West Sussex, England. In J. Doe, M. Doe, & Z. Doe (Eds.) *The Iron Age* (pp. 200-220). London: Iron Press.

(Journal)

- 2) Doe, M. (1999). *The 1998 archaeological excavations at a Neolithic site on Brown's Farm in Wiltshire, England*, *Journal of Geophysics and Archaeology*, 28, 41-60.

Biological Sciences

(Book)

- 1) Doe, J. (1984). *Hedgehogs and their habitats in the United Kingdom*. Glasgow: H.H. Press.

(Dissertation Work)

- 2) Doe, F. (1991). *The effects of ink disease on sessile oak trees in Scotland*. [Unpublished Msc dissertation, University of UK].

Civil Engineering

(Book)

- 1) Doe, W.T. (1991). *A study of wind turbine designs*. Birmingham: Wind Press.

(Internet Address/URL)

- 2) Doe, T. (1999). *UK Map Office Datums and Waypoints*: Retrieved June 15, 2002:
<http://www.maps.gov.uk/datums.html>

Earth Sciences

(Images and Maps)

- 1) Panchromatic Aerial Photographs (1997). 1:50 000 (Wales Series; plates 1-56).
- 2) West Berkshire Soil Series Maps (1981). 1:25 000 (Sheets 1-45).

Environmental Sciences

- 1) UK County Council Environmental and Water Services Offices 1996 well location datasets.
- 2) British Geological Survey's Digital Geological Map of Great Britain (1980). 1:50 000 (British series; 1-456).

Geography

- 1) Landsat TM satellite image (19 May 1994). 30 metre resolution (Row 201, Path 24) .
- 2) 1989 Postcode Boundaries of the General Register's Office for Scotland.
- 3) Panchromatic Aerial Photograph (2000). 1:25 000 (Bangor Series; plates 16-18).

Health Sciences

(Journal)

- 1) Doe, A. (2003). *The Incidence of Smoke-related Cancers amongst Women in Aberdeenshire County, Scotland from 1980 to 2002*. The Journal of Medicine, 13, 11-23.

(Conference Proceedings)

- 2) Doe, B. (1992). Long-term health effects associated with beer consumption: A controlled study of population groups in the city of Glasgow, Scotland from 1950 to 1990. In, *Health and social policy: proceedings of the fifth annual seminar, January 1992, London*. Ed. by K. Doe. British Health Initiative: 42-67.

History

(Computer Database Source):

- 1) Doe, J. M. & Doe, G. (1988) National Statistical Data from 1901 to 1910 [computer file]. Colchester: ESRC Data Archive [distributor].

(CD-ROM)

British National Statistics, 1905 (1996) [CD-ROM] Colchester: UKDA Press.

Paper and Digital Maps (Datasets)

- 1) County and Parish Maps of Scotland (1750-1928). 1: 100 000 (Caledonian Series; sheets 1-280).

*Scottish County Digital Maps, 1988.

*Scottish Parish Digital Maps, 1987, 1988 and 1989.

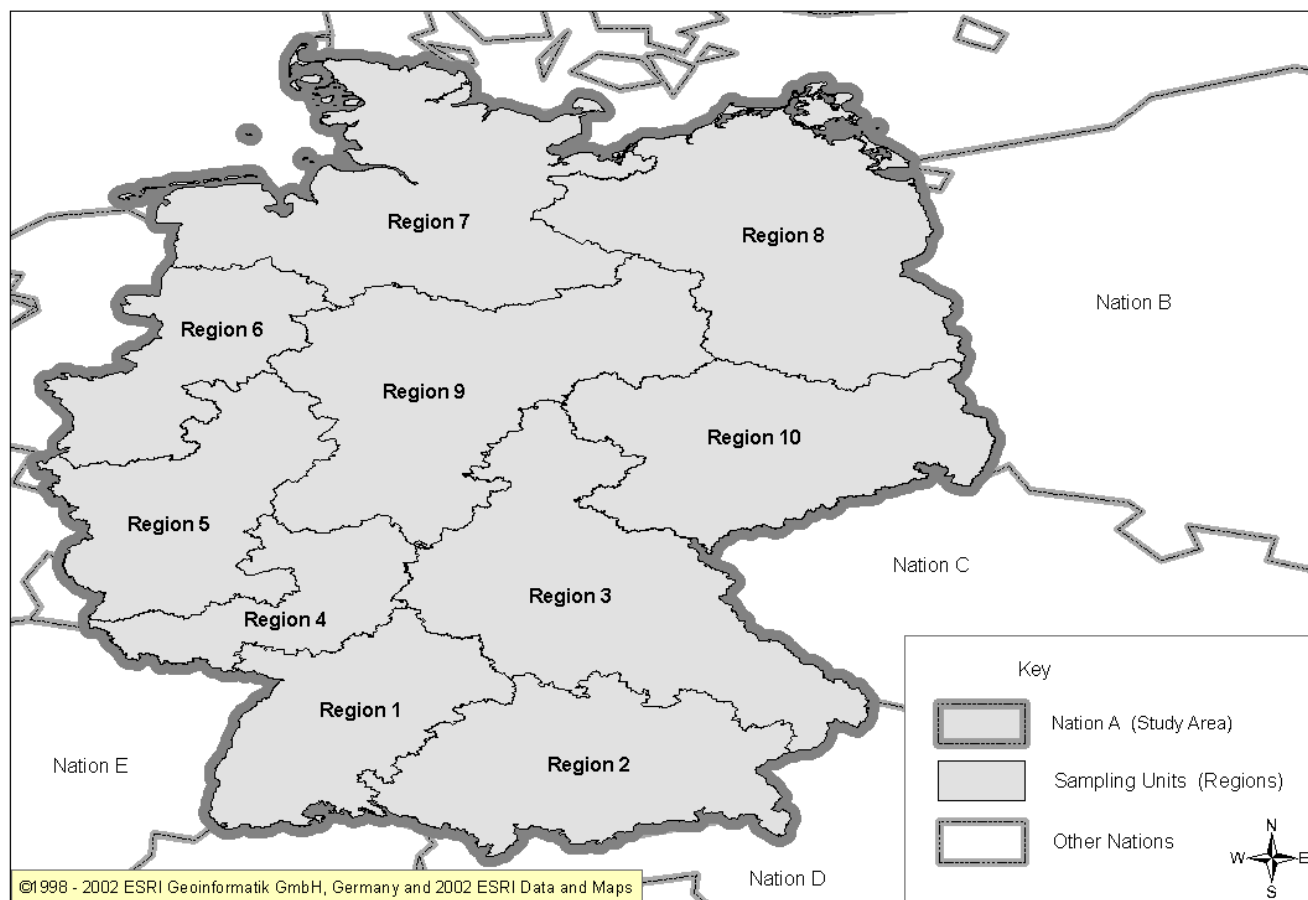
*Scottish National Digital Maps, 2000.

*The latter three are references to digital dataset titles that were also used in the study. In practice, each of these datasets would have its own metadata file even if all were used for this one study.

Sociology

- 1) Doe, S. (2001). *Drugs and Crime in the Urban Setting: A Trend Analysis for Urban Areas across the United Kingdom, 1995 to 2000*. The Journal of British Medicine, 21, 67-99.
- 2) Doe, P. (1998). *A Study of Cultural Perceptions of Environmental Risks in the United Kingdom*. Journal of Environmental Perception, 12, 78-96.

Figure 1. Example of a Geographic Identifier used to define a spatial reference system.



In this example, a survey has been conducted across 10 regions of Nation A; the latter represents the study area and is outlined with a thick boundary line. The regions are grey-shaded and each one represents a sampling unit, which in this example, can represent an administrative area.

If the dataset for this study area is not geo-referenced (no co-ordinate system), a region is recognised as the spatial reference system unit and “region” is entered as a value in the Geographic Identifier element’s field. If each region represented a postcode district, then that is what would be entered into the Geographic Identifier element’s field.

If a survey were to have been conducted in Nations A, B,C,D and E, and each nation represents a sampling unit, then “nation” would be the value entered in the Geographic Identifier element’s field. On the other hand, if a nation-wide surveys were conducted and the sampling units and co-ordinate system are unknown, then “Unknown” would be entered as a value.

(Source Scale Denominator element, Identifier 19) (Figures 2 and 3)

The following two maps (Figures 2 and 3) on pp 119 and 120 provide illustrated examples for scale. This is the ratio or relationship between a distance or area on a map and the corresponding distance or area on the ground. Geo-referenced maps, or those with co-ordinates, have ground units of measurement. These can be expressed in terms of feet/miles or metres/kilometres.

Typically the original map of a derived dataset is the source for the denominator scale. Map 1 (Figure 2) was originally derived from the Ordnance Survey Strategi© Series. The scale for this series is expressed as a representative fraction (1:250,000). This means that one unit of measure on the map corresponds to 250000 units in the real world. If the ground units are expressed in centimetres, then 1.0 centimetres on the map equals 250,000 centimetres in the real world.

Map 2 (Figure 3), is part of the Ordnance Survey's Meridian and Land-Form Panorama Series and the scale for these is 1: 50,000. The difference between the two maps is apparent. Map 1 shows less detail and appears farther away. In comparison to the Map 2, this is a smaller scale map. It is important to recognise that maps showing little detail or covering a greater area are considered small scale. A map that shows the entire extent of Europe would be presented at a small scale. An OS Strategi© map, such as Map 1, represents an medium or intermediate scale. This scale ranges from 1:600,000 to 1:75,000. Any map greater than the former is considered small scale; any map with a scale less than 1:75,000 is considered large scale, which is the case for Map 2. The contour lines that are present on Map 2 are missing on Map 1, and the towns' boundary limits are much better defined.

Another reason for presenting two maps at different scales is to explain further the steps to calculate scale. Both maps provide the distance between two towns in north-eastern Scotland. In the real world, Boyndlie and Ladysford are approximately 2.2 kilometres apart. Regardless of the map scale, that distance will not change unless the borders expand or a town physically moves.

Now looking at the two maps and examining the distances on the maps, it is apparent that the map distance is different. On the smaller scale map (Map 1), the map distance between the two towns is 1.5 cm. Now looking at Map 2, the map distance is even greater (5.2 cm); however, the idea is to compare map distance and real world distance with scale. On Map 1, the map scale bar shows distance units in kilometres; Map 2 uses metres. For Map 1, a map distance of 6 cm is about the same as 10 km on the ground. For Map 2, a map distance of 6 cm covers a ground distance of about 2,500 metres or 2.5 kilometres. If kilometres are converted to metres and the map distance is divided from the totals (10 km = 10,000 metres/6 cm and 2,500 metres/6cm), then the scale for each map is as follows:

Map 1 = 1: 1,666.6 Value to enter in Source Denominator Scale element's field: 1666

Map 2 = 1: 416.6 Value to enter in Source Denominator Scale element's field: 416

So despite the fact that the map distance is greater for Map 2, each centimetre represents 416.6 centimetres in the real world as opposed to 1,666.6 centimetres for Map 1, which again is a smaller scale, thus accounting for the greater distance covered with each map centimetre.

As for the Source Denominator Scale element, a value of 416 would be entered in the metadata field for Map 1 and 1666 for Map 2. If an Ordnance Survey Strategi© Series map were the source, then a value of 250000 would be entered. The scale denominator is always entered and no commas or full stops are used for values greater than thousands or decimal places. If so, it is better to round the denominator number to the nearest whole number.

The Source Scale Denominator can apply to both vector and raster datasets. Many digital maps are also presented in raster format, though imagery and elevation model datasets are the typical for the latter format. It is also possible to include the Source Scale Denominator and x and y grid cell values for some raster datasets. More can be explained about this under the examples for grid cell x and y values.

Figure 2. First example of scale and distance between points on map 1 (zoomed out)

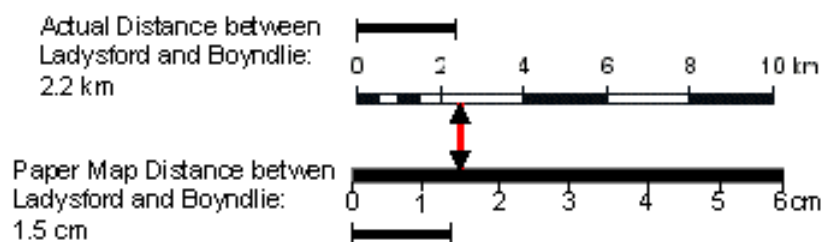
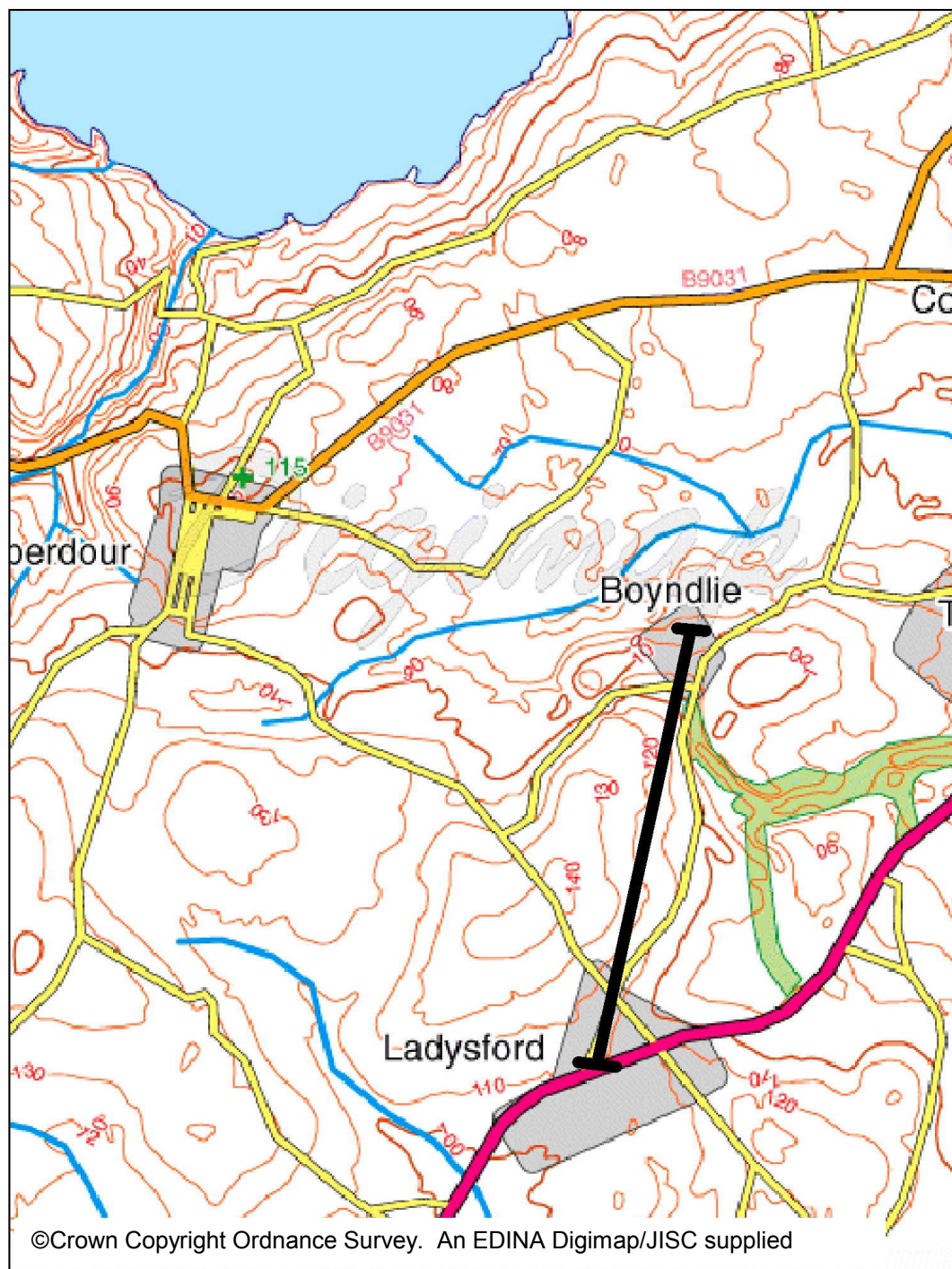
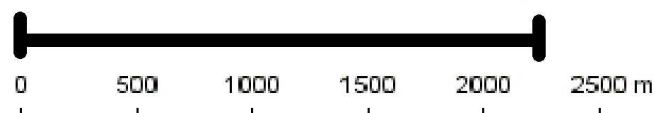


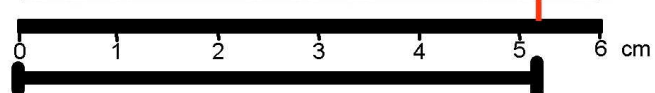
Figure 3. Second example of scale and distance between points on map 2 (zoomed in)



Actual Distance between
Ladysford and Boyndlie:
2,200 metres (2.2 km)



Paper Map Distance between
Ladysford and Boyndlie:
5.2 cm



Examples for the Imagery or Grid Raster Cell/Pixel Size X- and Y-Value elements ([return to p33](#))
(Raster Cell/Pixel Size X and Y - Value elements, Identifiers 20 and 21) (Figures 4 to 10)

Raster refers to datasets that are made of rows and columns of cells. Each cell contains a value, and groups of cells sharing the same value represent geographic features. Typically, raster datasets are geo-referenced and store co-ordinate information. Raster cells can also be referred to as pixels.

Another term used for raster data is grid, which is commonly associated with equally sized square cells that are also arranged in rows and columns. Again, each cell contains an attribute value. Typically, remotely sensed imagery and digital elevation models (DEMs) are considered raster or grid-based datasets.

In terms of the level of spatial detail, or resolution, the x- and y-values of a single cell are entered into the respective x and y value element fields. There is one value for the x length of the cell and another for the y length. Most raster datasets contain this information in their metadata or purchase order. A number of satellite imagery products have standard grid cell sizes; the same holds true for digital elevation models (DEMs). Landsat 5 and 7 satellites provide multi-spectral imagery with 30 x 30 metre cells, though it is important to note that Landsat 7's panchromatic images have 15 x 15 metre resolution and its thermal band resolution measures at 60 x 60 metres. Most higher resolution DEMs have grid cell sizes of 30 x 30 metres.

It should be noted that high and low resolutions indicate the amount of detail that can be seen in an image. A high resolution image, often associated with low flying aerial photographs or new generation satellites, provides sub-metre resolution. Ground objects of that size can be articulated and seen in a photograph because each cell or pixel captures more detail. An image with sub-metre resolution, would enable a user to see cars and possibly people. Conversely, a low resolution image would not offer the same detail. The thermal band of Landsat 7 measures at 60 x 60 metres, which surely means that car would not be seen. Ground objects would need to cover an area of 60 x 60 metres or more in order to be distinctive and identifiable. Anything smaller than that could not be identified. The purpose of this band is to measure heat that is emitted from the earth and is not to be used for mapping surface features.

The difference in cell size can also affect accuracy. The larger the area that a cell covers, the more uncertain it is about the values within it. A 30 x 30 metre DEM has only one elevation value for an area of 900 square metres. It might be best explained that the value represents an average for the area. An average for an area this size would not account for the presence of a narrow ditch measuring two metres wide. A 1 x 1 metre DEM would provide the resolution or cell size to capture this ditch feature and provide elevation values for it.

If uncertain about the cell size/resolution, it is a matter of using a measurement tool and zooming function to determine the x and y values. Most GIS and CAD software packages have these capabilities. The next two sets of raster images (Figures 1 to 7) introduce the nature of image resolution and cell sizes. The first set (Figures 4 to 7) show a Landsat 7 satellite multi-spectral image. It has a 30 x 30 metre resolution, thus the x and y values are the same measurements. The last three images (Figures 8 to 10) represent a 30 x 30 metre digital elevation model (DEM). Again resolution and cell size are one the same (30 x 30 metres). An arrow is used to point out the pixel that is zoomed into with the subsequent images.

Figure 4. Landsat Image (30 x 30 metre resolution) at full extent and no evident pixelation.



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Figure 5. Landsat Image, in closer with pixelation effect becoming apparent.



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Figure 6. Landsat Image, in closer with further pixelation.

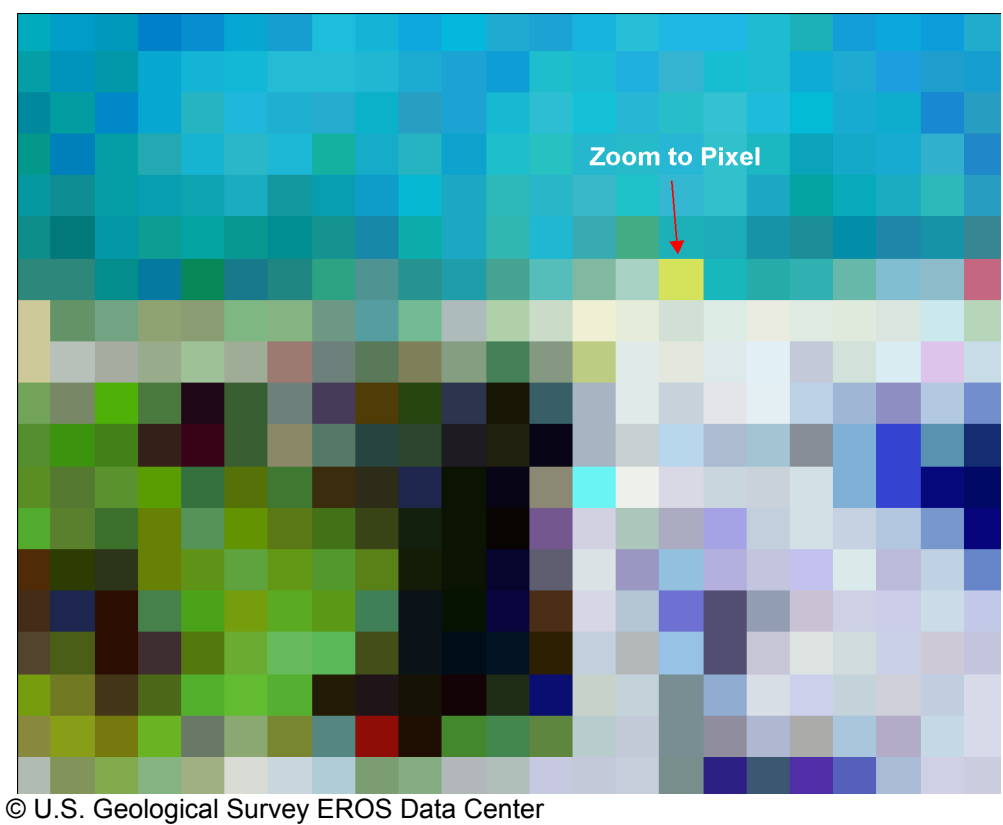


Figure 7. Landsat Image (30 x 30 metre resolution) and the x- and y-values of a cell.

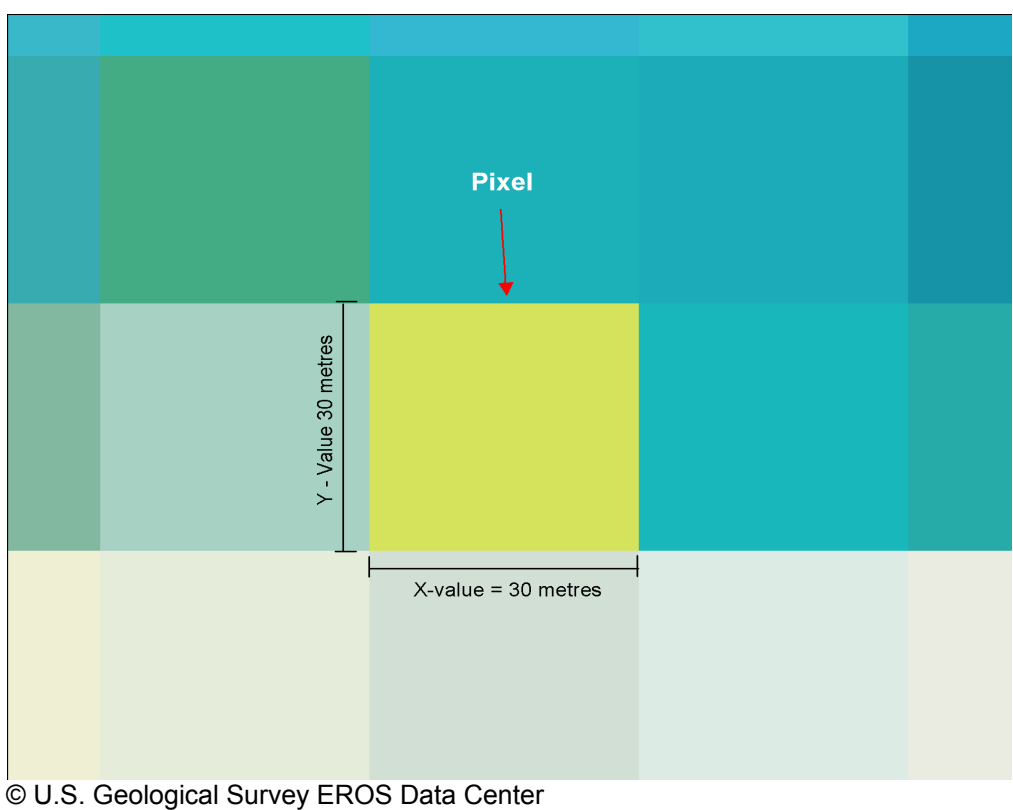
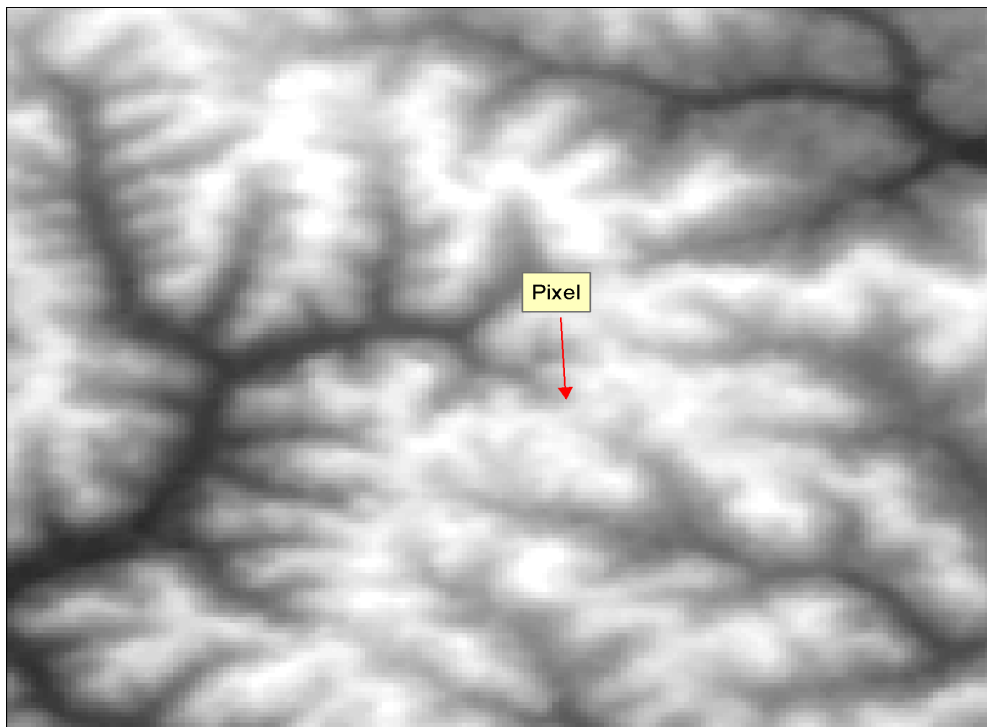
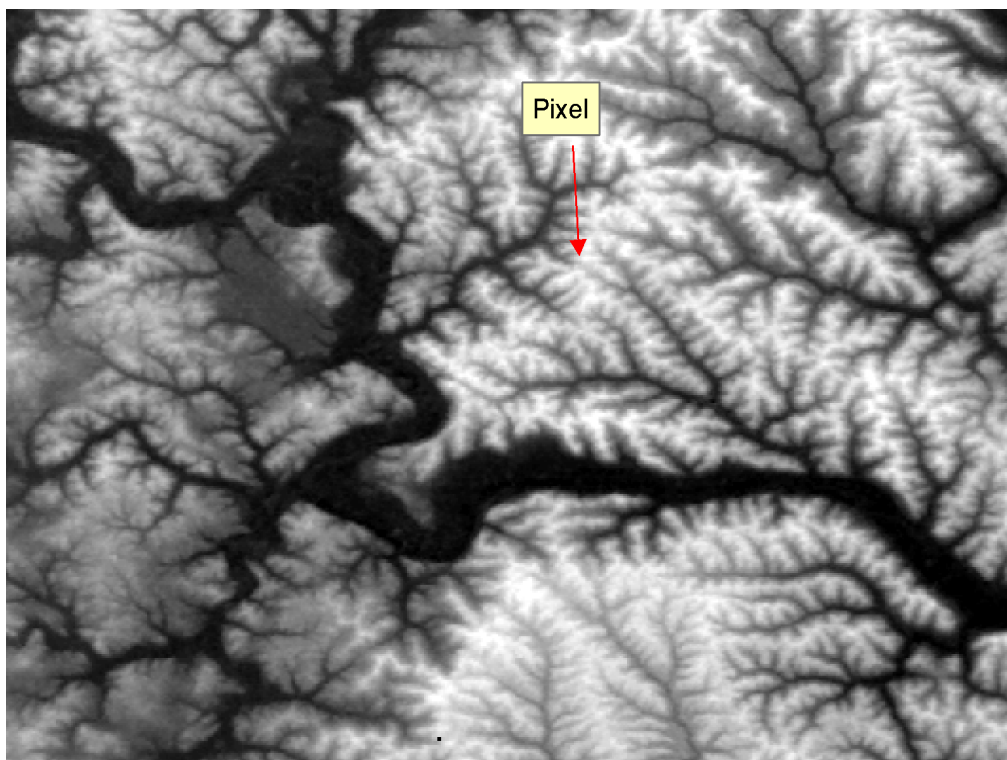


Figure 8. Digital Elevation Model (30 x 30 metre) at full extent.



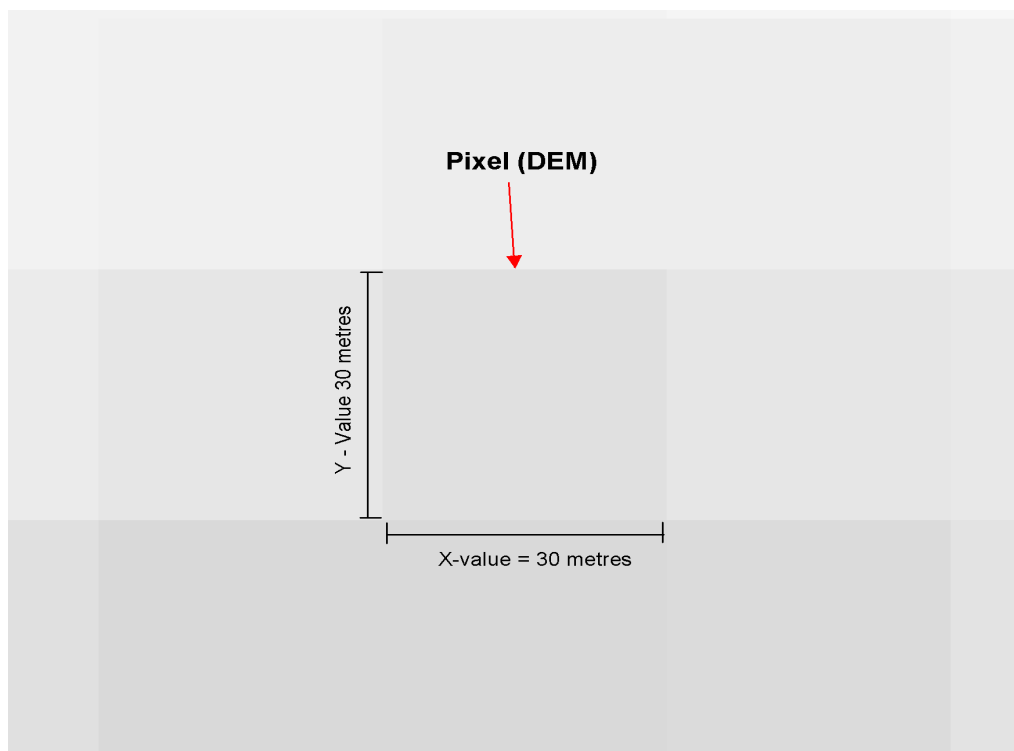
© U.S. Geological Survey EROS Data Center

Figure 9. Digital Elevation Model (30 x 30 metre) with pixelation effect becoming apparent.



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Figure 10. Digital Elevation Model (30 x 30 metre) and the x- and y-values of a cell.



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(Smallest Administrative Unit element, Identifier 22) (Figures 11 and 12)

The Smallest Administrative Unit element is selected when a dataset of a study area has no spatial reference system, and thus no means to measure scale. A typical example is a survey conducted with the use of a paper map that provides survey unit boundaries. These units can be postcodes, wards, counties, or whatever area that defines the smallest representative unit associated with disaggregated data. In this situation too, the captured data are stored in a database or copied to a paper map, with a value written inside each polygon on the map. In these instances it certainly might be possible to calculate the scale by measuring two points on a map and then acquiring the actual real world distance. For the purposes of this element, maps will be presented with the assumption that the user doesn't want to calculate scale, but would rather use a distinctive administrative unit.

These maps (Figures 11 and 12) provide two examples of representative administrative units that could be entered as values in the Smallest Administrative Unit element's field. The first shows a block of 10 regions (Figure 12) which constitutes a study area (Nation A). Each region represents a separate sampling unit within the survey or study area. It is at this level the data are collected separately or are considered disaggregated. For this example, "Region" would be the value entered in the Smallest Administrative Unit element's field.

The latter map (Figure 12), provides another example, but in this case, postcode districts represent the smallest administrative units. There are 12 postcode districts associated with administrative area 3, which represents the study area, and each postcode district is a sampling unit. "Postcode district" would be the value entered in the Smallest Administrative Unit element's field.

Figure 11. First example showing regions as the smallest administrative units.

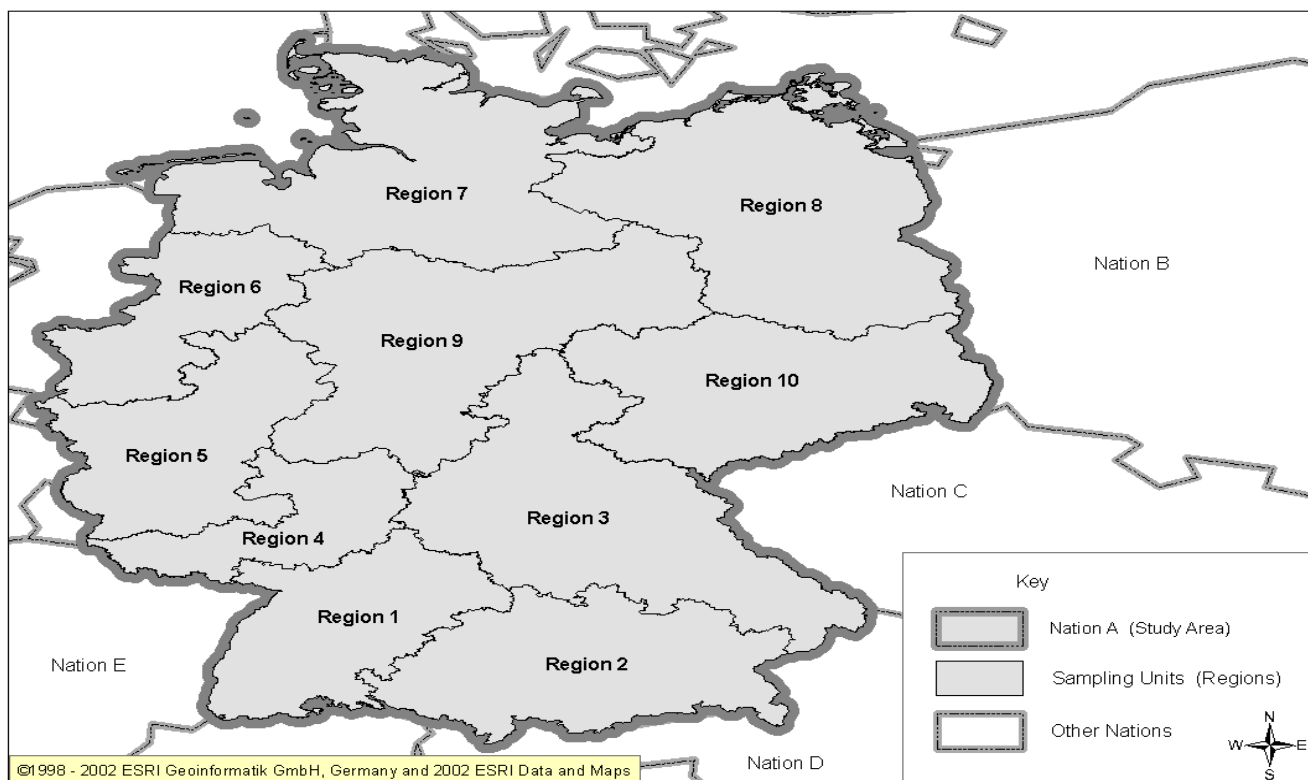
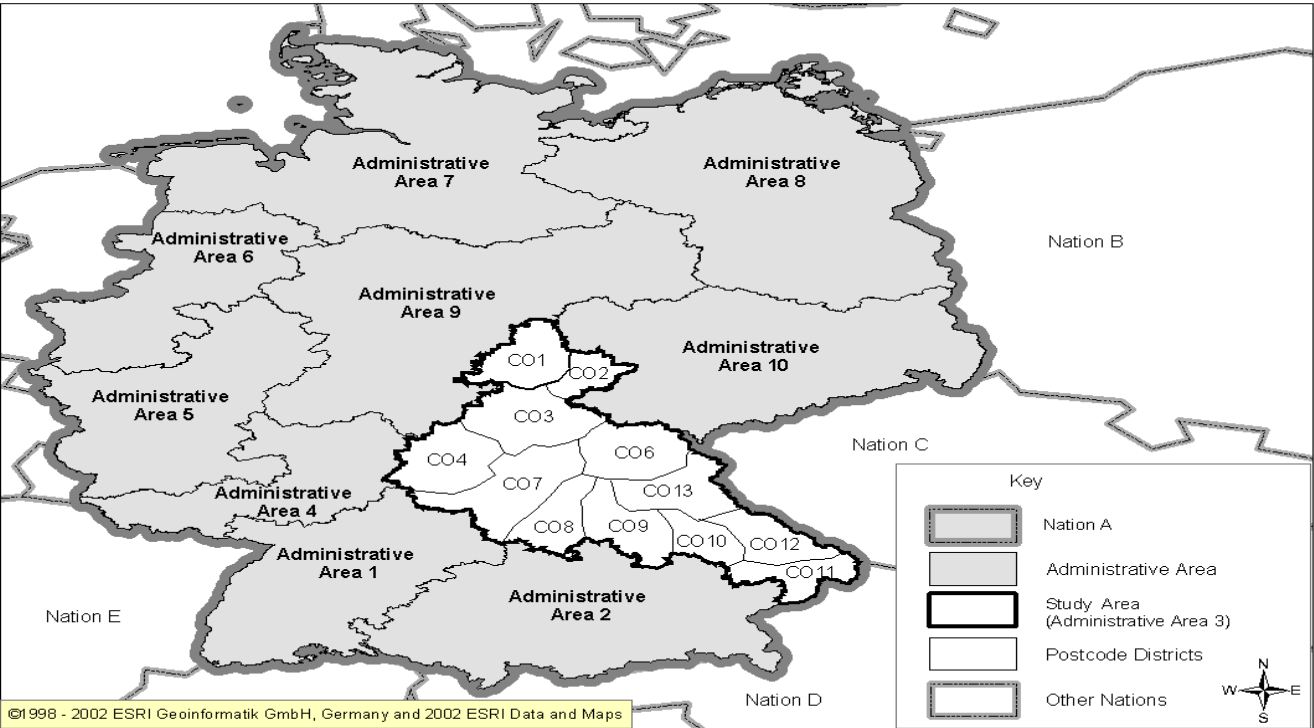


Figure 12. Second example showing postcode districts as the smallest administrative units.

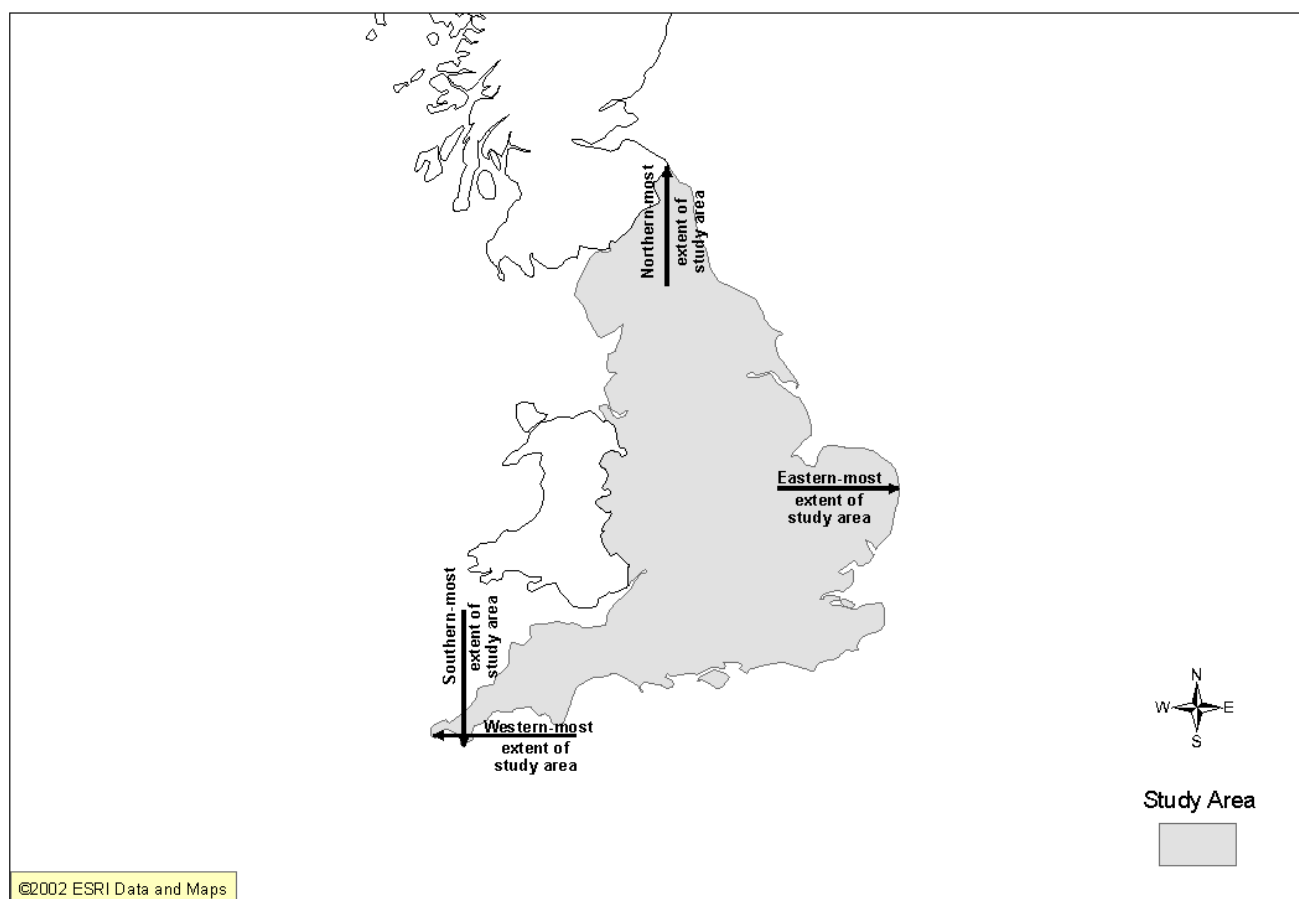


Examples for the System of Spatial Referencing by Co-ordinates and West, ([return to p49](#)) East, North and South Bounding Rectangle elements (Spatial Referencing by Co-ordinates, West Bounding Co-ordinate, East Bounding Co-ordinate, North Bounding Co-ordinate, South Bounding Co-ordinate elements, Identifiers 30, 31, 32, 33 and 34) **(Figure 13 to 18)**

This map (Figure 13) defines the western, eastern, northern and southern-most points of a study area. The study area is based to an area east of the Prime Meridian. The co-ordinates (Figure 14) for these extents are based on the British National Grid System, so this is what would be entered in the System of Spatial Referencing by Co-ordinates (identifier 30) element field.

The first step to is to view the study area and find the points representing the farthest extents. Once these have been located, as demonstrated on the map with arrows, the values can be calculated using several methods. Many GIS software packages display co-ordinate values as the cursor moves across the screen display of the map or points at a specific location. Usually the co-ordinate values appear in a box alongside buttons and menus of the software program. GIS software packages can also provide extent values under one of the menu options. This extents option might typically be found under the “properties.” Please consult the GIS software manual for further details.

Figure 13. Definition of the system of spatial referencing and British National Grid System extents.



This map (Figure 14) provides an example of the values acquired, which are presented in metres. It is important to keep in mind that one value is needed for each extent point. Any cursor point on the screen will display two values. One will be associated with an x-grid value and the other the y-grid value. The x-value will apply to the horizontal range across the screen and y-value to the vertical. Moving the cursor one way or the other will verify this as the x- or y-grid numbers will increase or decrease. If the unit of measures are within the ranges of page sizes, then the map hasn't been geo-referenced and those values will not provide a real-world extent, but only that of the monitor screen. The aforementioned details also assume that the map hasn't been rotated, which means that the top of the screen is north.

The British Nation Grid System values that can be entered to the nearest kilometre into the respective element fields. Here are the expressed values in metres, which have been converted to kilometres.

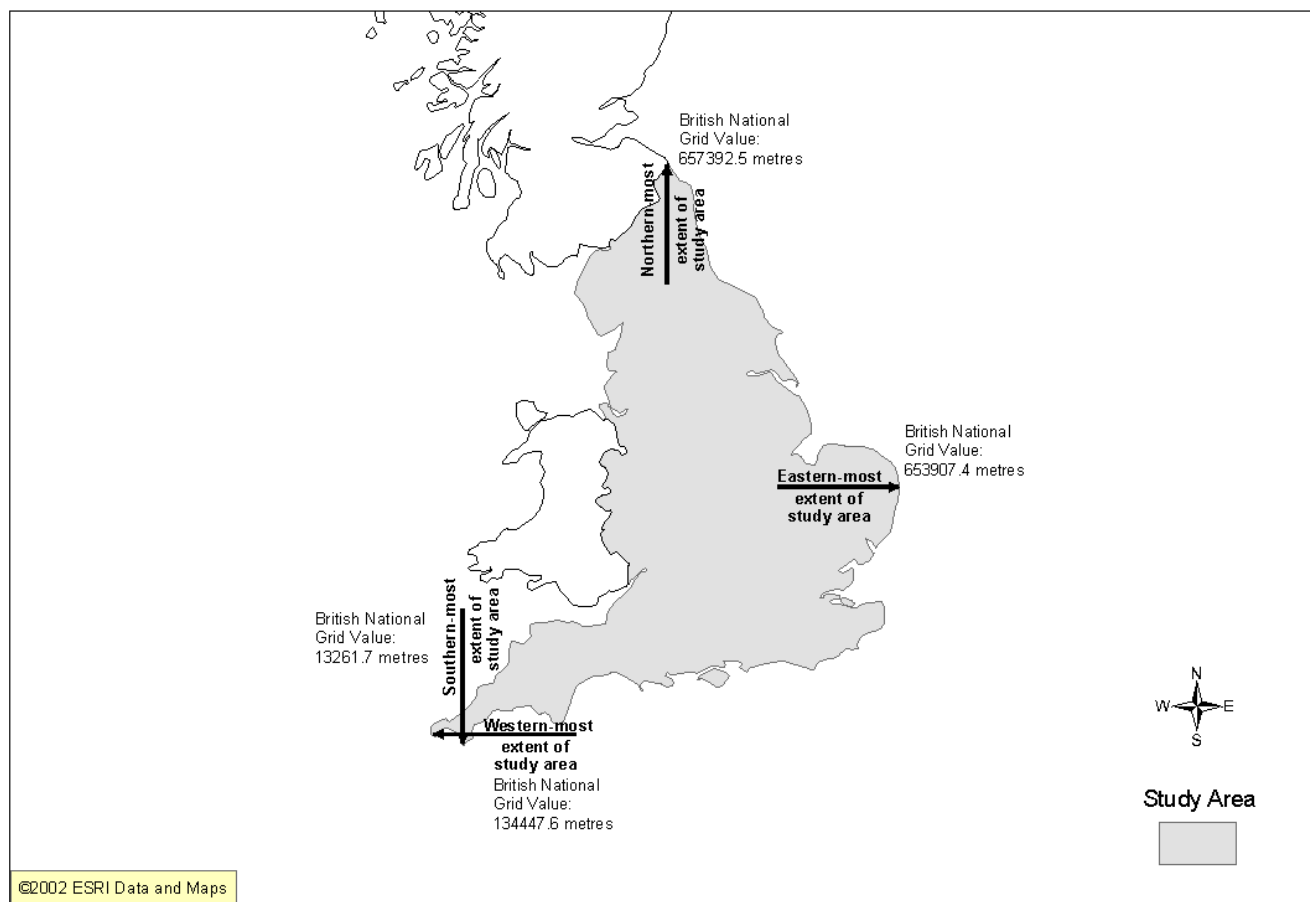
West Bounding Co-ordinate = 134,447.6 or: 134

East Bounding Co-ordinate = 653,907.4 or: 653

North Bounding Co-ordinate = 657,392.5 or: 657

South Bounding Co-ordinate = 13,261.7 or: 13

Figure 14. Display of the British National Grid System extent values.



This map (Figure 15) is based on the geographic co-ordinate system or latitude and longitude, which accounts for the stretched appearance of the study area in comparison to previous maps based on the British National Grid system. The latitude and longitude system would need to be entered in the System of Spatial Referencing by Co-ordinates (identifier 30) element field.

Again, the same approach is used to capture the co-ordinates for the extent points. Here again the extent points don't change despite the type of co-ordinate system used. The shape of the study area has changed, but it is still at the same location on the earth's surface. These variations in shape account for different types of projections that are used to adjust two-dimensional maps to the three-dimensional curvature of the earth and reduce distortion. The British National Grid uses a Transverse Mercator projection.

As with the British National Grid co-ordinates, the cursor can be pointed to the extent points of the study area. There will be again two sets of numbers that correspond to parallel degrees latitude and meridian degrees longitude. Degrees longitude will be associated with the horizontal and degrees latitude for the vertical. The values are presented in terms of degrees minutes and seconds. Longitude degrees West are expressed as $-5^{\circ} 42' 41.8''$ represent -5 degrees 42 minutes and 41.8 seconds. The element requires that this expression of fractional parts of a degree must be converted and entered in decimal degrees and to the nearest hundredth of a degree (0.01). Converting this can be done with the following equation:

Decimal degrees = degrees + minutes/60 + seconds/3,600

This is how it is converted using the following value: $-5^{\circ} 42' 41.8''$

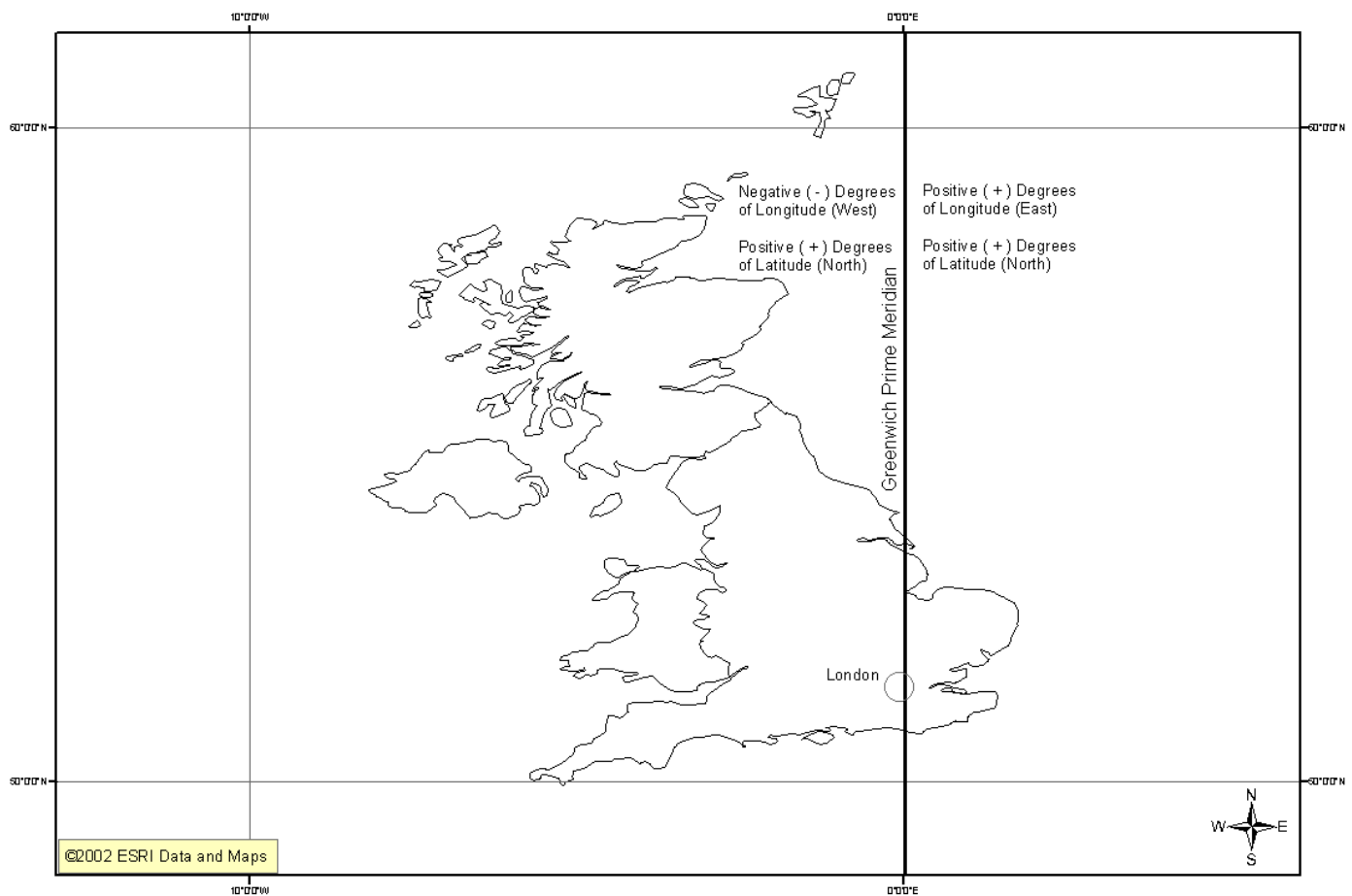
$-5 + 42/60 + 41.8/3600 = -5 + 0.7 + 0.0116 = -4.288$ decimal degrees

The internet also has web sites that provide conversion fields. A Google search should put you there.

Figure 15. The geographic extent values.



Figure 16. The Greenwich Prime Meridian.

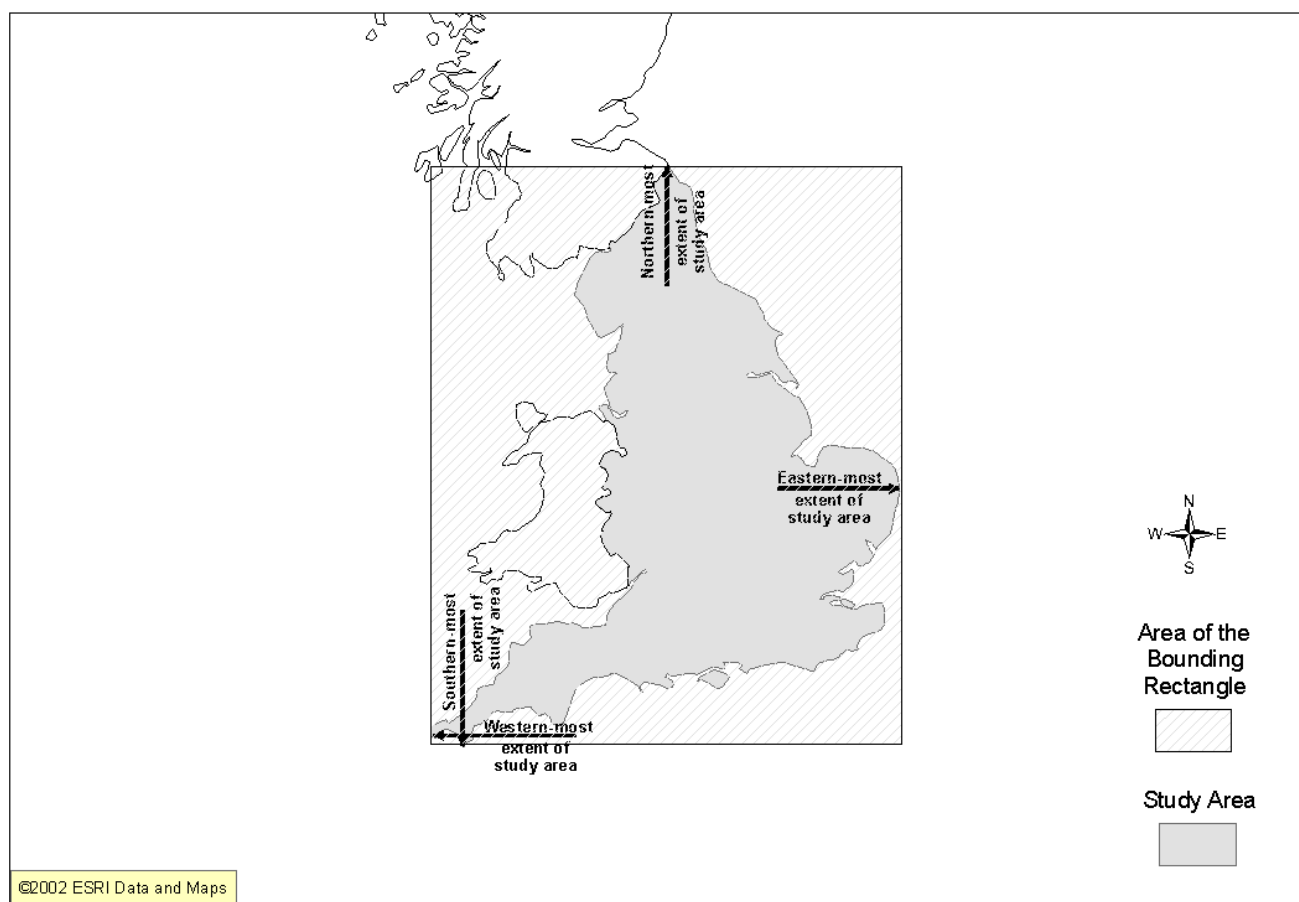


Another critical issue that needs to be addressed with regards to geographic co-ordinates is the Greenwich Prime Meridian, which runs through the heart of London and of course Greenwich (Figure 16).

Parallels of latitude and Meridians of longitude form the Geographic Reference System. This system treats the globe as if it were a sphere or spheroid. The sphere is divided into 360 equal parts called degrees. Each degree can be further subdivided into 60 minutes, each composed of 60 seconds. The standard origin is where the Greenwich Prime Meridian intersects the Equator and divides the globe into four quadrants: northwest, northeast, southwest and southeast. All points are positive north of the Equator and east of the Prime Meridian, and negative south of the Equator and west of the Prime Meridian.

For the purposes of the United Kingdom, it is important to keep in mind that the degrees longitude for any study area extent east of the Greenwich Prime Meridian will be positive and any to the west will be negative. As it appears on the map, much of the United Kingdom lies to the west of the Meridian. Regarding degrees of latitude, all values are positive for the United Kingdom.

Figure 17. The extents of a bounding rectangle.



The results of entering the co-ordinates for the west, east, north and south extents will produce a bounding box as displayed above (Figure 17). This bounding box includes the entire study area as well as an extraneous zone (diagonal lines) that falls between the study area and the bounding box limits. Any spatial searches conducted would include all information wholly inside the bounding rectangle and not be restricted to the study area. This could mean that more information or metadata records will come back during any queries made to this study area. A user may wish to acquire additional information or datasets associated specifically with this area. A better and more effective means to define a study area is with a bounding polygon, which represents all the x- and y-co-ordinates of the study area's actual boundary and not four points.

The co-ordinates of a bounding rectangle will be displayed on the Go-Geo! portal's metadata results page under the "Where" tab (Figure 18). This tab will also include two generalised maps that show the bounding box in relation to the study area (large scale map on Where tab's the bottom left) and its location in the United Kingdom (small scale map on the Where tab's bottom right).

Figure 18. Example of a map displaying the bounding rectangle extents of a UK census of woodland and trees dataset's metadata record presented on the Go-Geo! portal's metadata results page.



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(Co-ordinates of a Bounding Polygon elements, Identifiers 35) (Figures 19 to 23)

These are examples (Figures 19 and 20) of a study area's bounding polygon, which for purposes of spatial queries, discovers metadata or datasets specific to the study area. The x and y co-ordinates are provided for points along the boundary as illustrated in the lower map (Figure 2). Because it entails considerable time to collect so many x- and y- values, it is hoped that a tool will be introduced that captures these values. The values will be stored internally in the Go-Geo! portal's database, but not be presented in the metadata file other than as a part of a map display, as demonstrated for the co-ordinates of a bounding rectangle (Figure 18). Some GIS software packages can also export these values.

Figure 19. A study area's bounding polygon with x- and y-co-ordinate points presented.

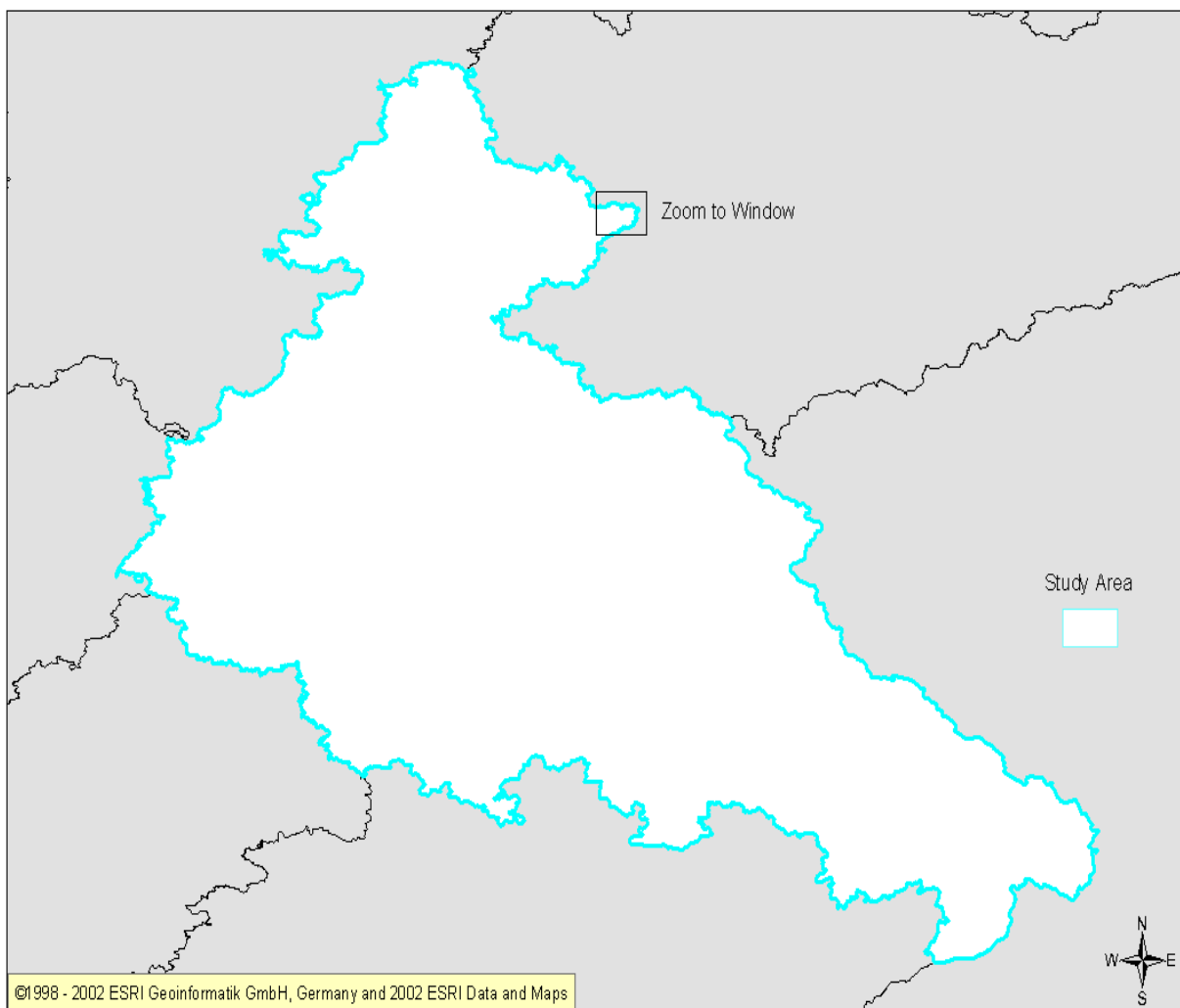
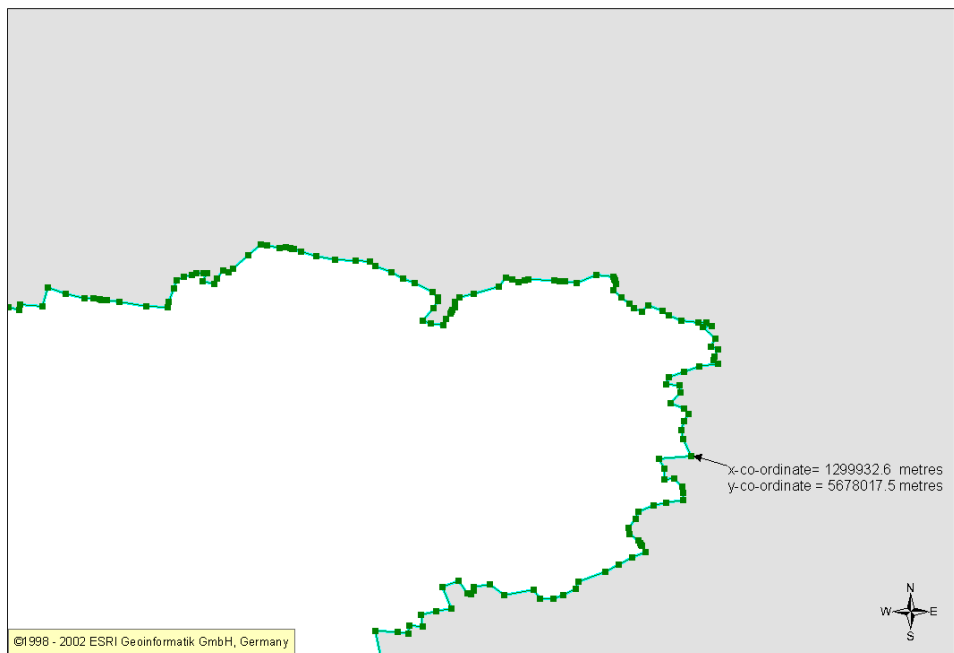


Figure 20. A close zoom window view of a study area's co-ordinate points of a bounding polygon.



Another short-term solution to capturing x- and y- co-ordinates of a bounding polygon is to collect co-ordinate values for selected points around a study area (Figures 21 and 22). This approach doesn't provide the precision of the actual study area boundary, but it defines an extent that corresponds to the study area's shape. This eliminates the additional area that the bounding rectangle creates (Figure 23).

Figure 21. Example of 15 points where x- and y- co-ordinate values collected for defining shape extent of study area.

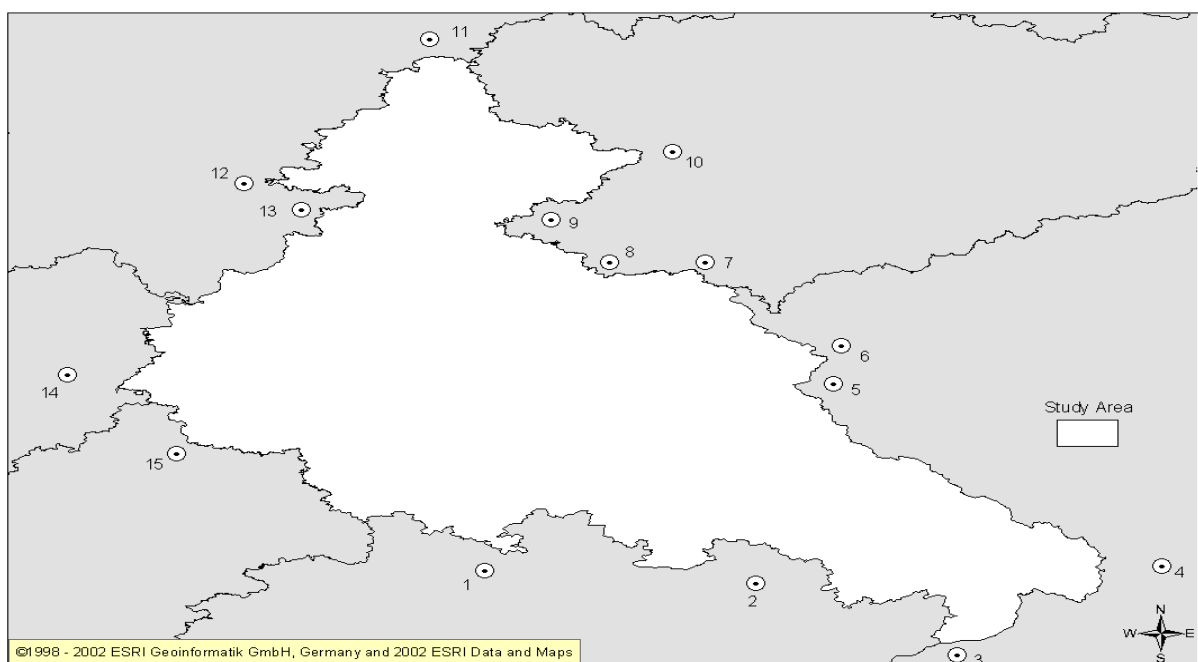


Figure 22. Example of polygon shape extent of a study area created using the x- and y- coordinate values.

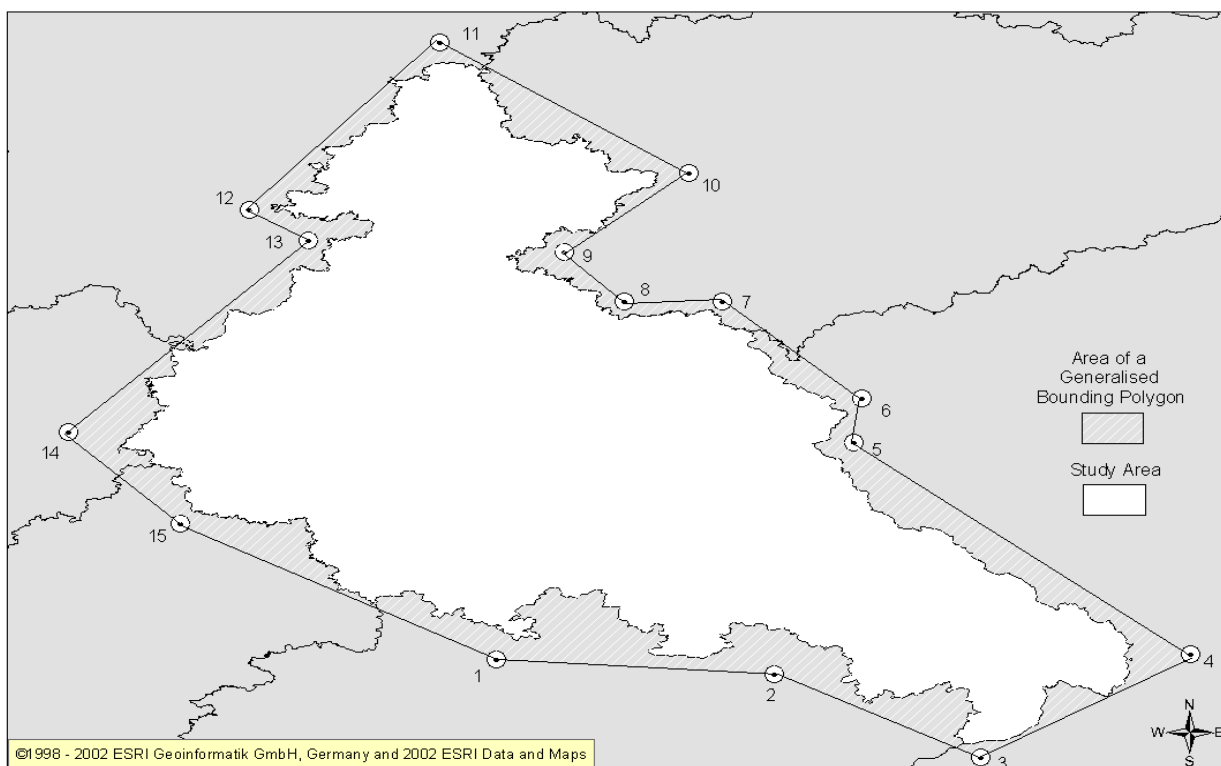
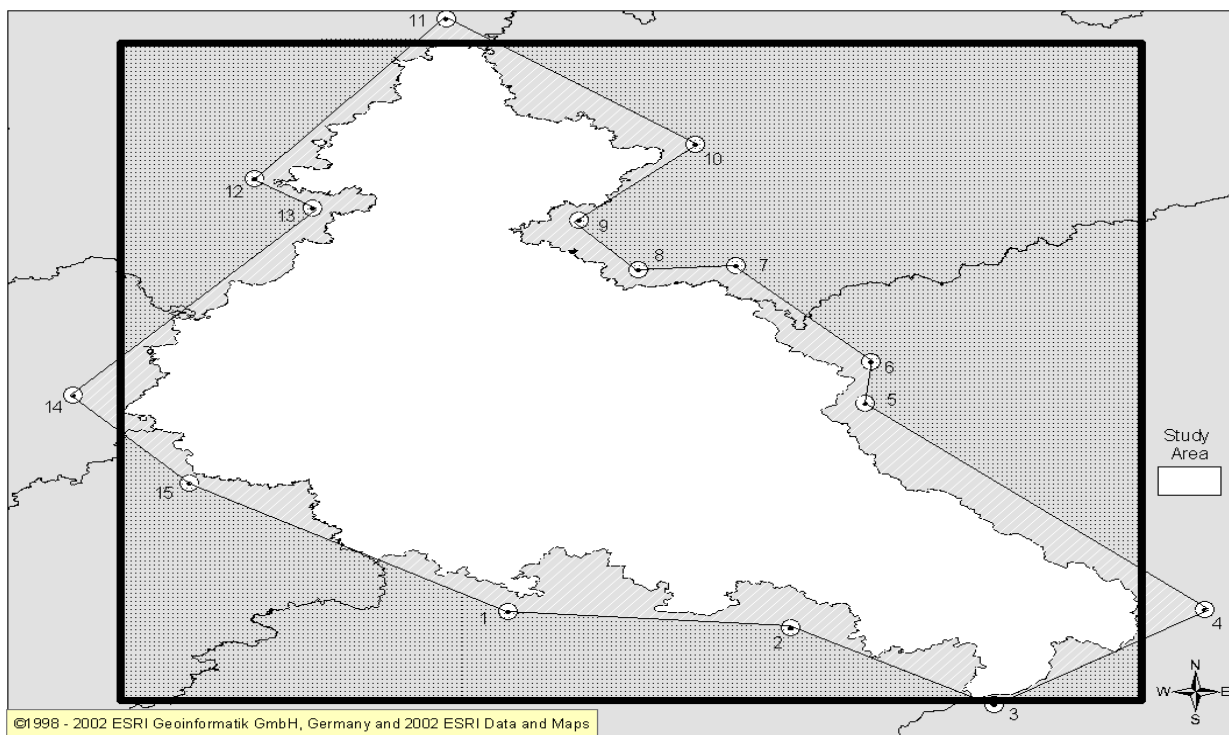


Figure 23. Example of bounding shape polygon and rectangle showing differences between extent ranges.



Example for the Spatial Referencing by Geographic Identifiers for Nation, Administrative Areas and Postcode Districts elements [\(return to p56\)](#)
(**Nation, Administrative Areas and Postcode Districts** elements, Identifiers 36, 37 and 38)

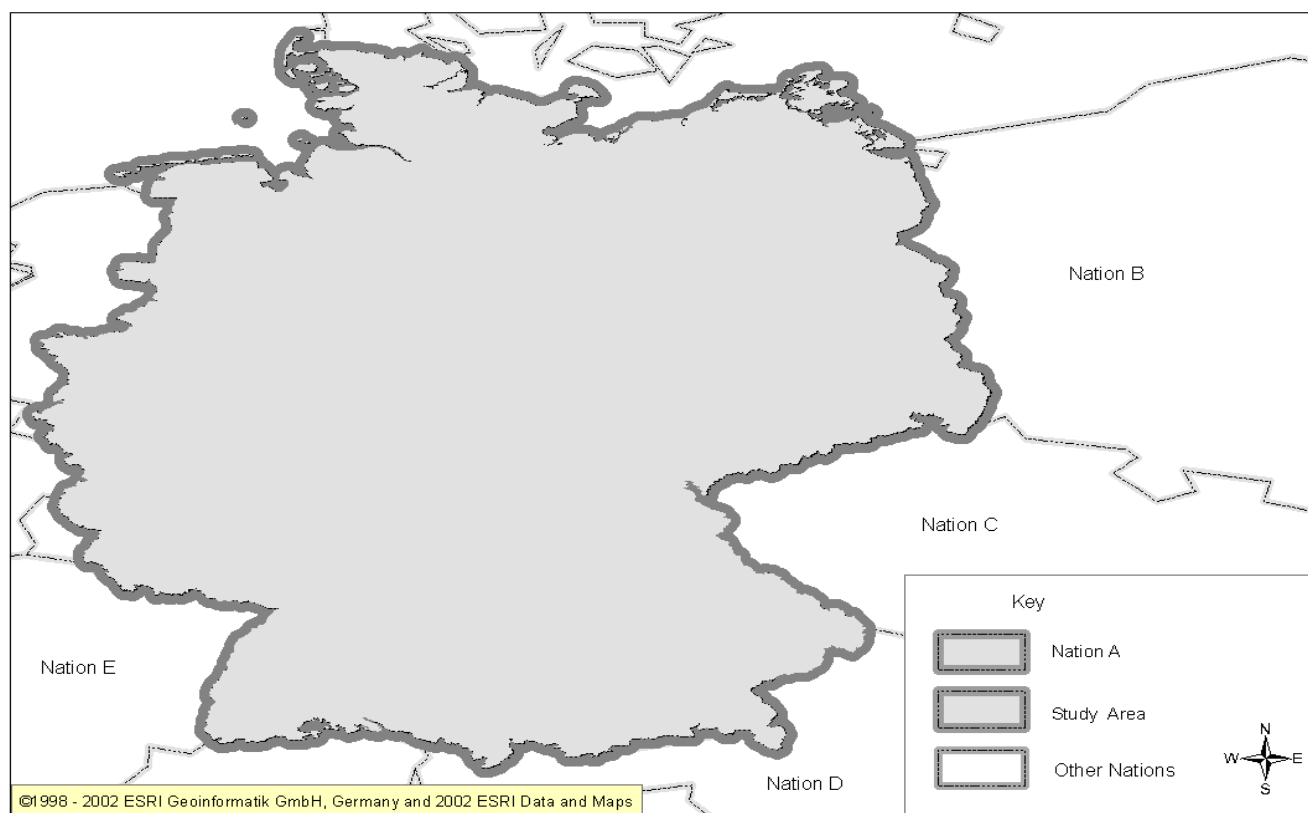
(Figures 24 to 26)

The following maps (Figures 24, 25 and 26) provide an example of geographic identifiers used to define the geographic extent of a study area.

There are two possible approaches to entering the extents of geographic identifiers. One option is to select only one level of geographic identifiers to define the extents. The second option can take a hierarchical approach that uses all levels of geographic identifiers to define the extent a dataset's study area. The latter option is probably preferable for defining the extents of small study areas, especially if they're associated with different levels or types of geographic identifiers.

Using only one level or type of geographic identifier would mean excluding the other two options. If a value for nation were entered then administrative area and postcode district would be excluded). As an example, if a study area represents an entire nation, as illustrated below (Figure 24), "Nation A" would be entered as a value. In this same illustration, if the study area were to extend into any portion of "Nation B," then that would be included as well. As it stands with this example, all of "Nation B" would be considered part of the study area even if only a portion were covered.

Figure 24. Example showing a study area that uses a nation for a geographic identifier.

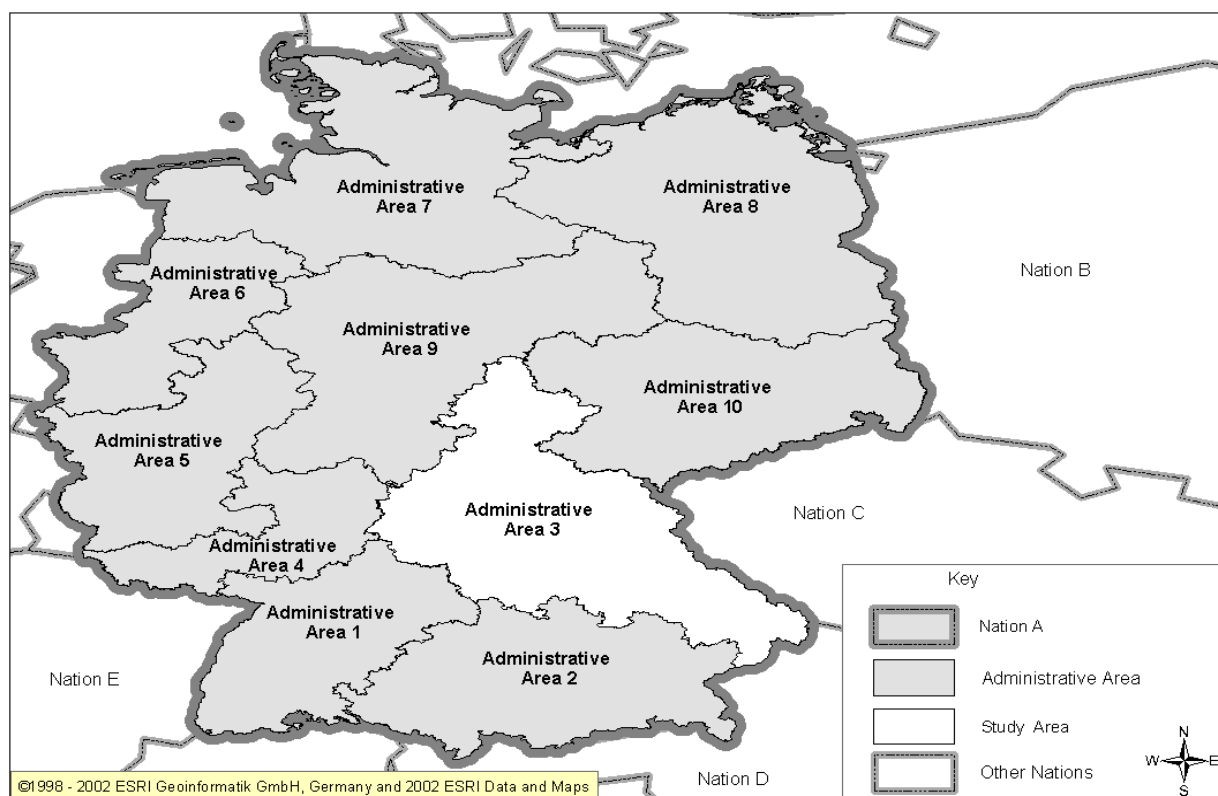


If it were such that administrative areas were used to define study area units, then all of the administrative areas of "Nation A" and those only covering the portion of "Nation B" would be entered as values. Taking this approach would require more entries than at the nation level. As

presented in the next map (Figure 25), there are 10 administrative areas in “Nation A.” Each area would need to be entered as a value, so this would require 10 values as opposed to one. The benefit is that if administrative areas were used in for study area units in an adjacent nation, again “Nation B” as an example, this would provide an extent that is more accurate than that at the nation level. The same would apply if postcode districts are used to define the extent; however, this would mean entering more values than would have been expected at the nation or possibly administrative area level depending if the areas represent counties, wards or other level.

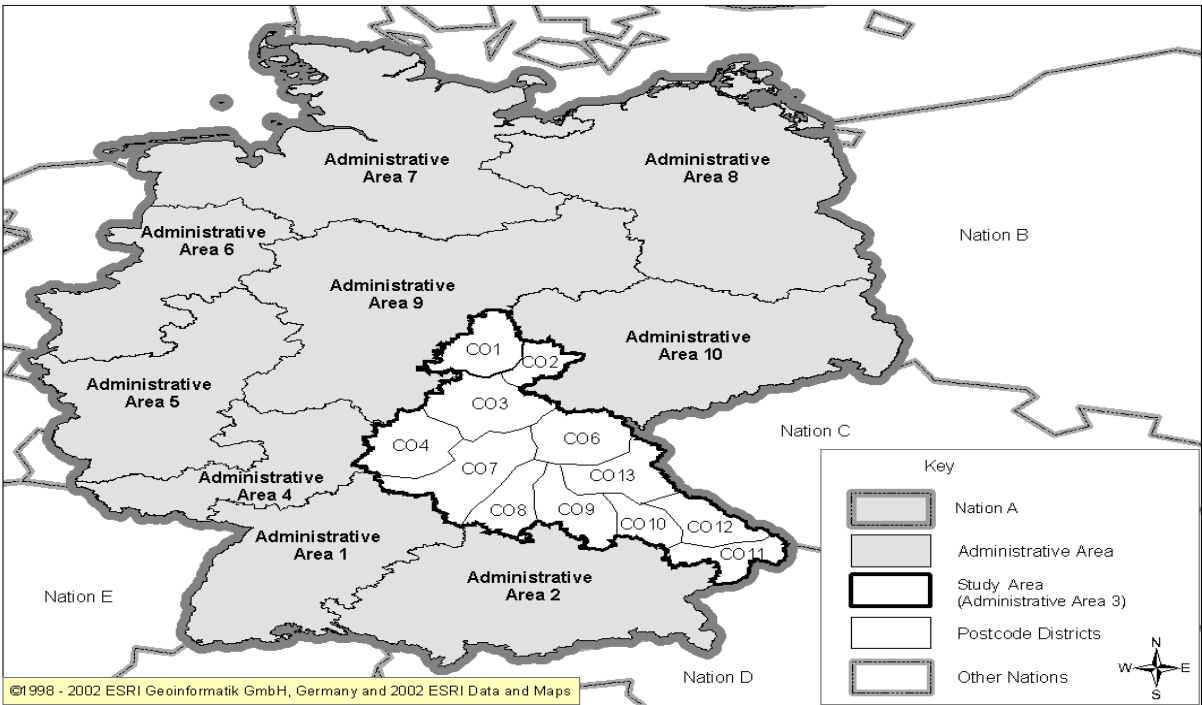
If a study area assumes collecting data within only one administrative area level, the next map (Figure 25), demonstrates this approach. Here, “Nation A” is divided into 10 administrative areas. The study area in this case is confined to Administrative Area 3, so this is the value that would be entered in the Administrative Area element’s field. Again, if the study area is expanded to include adjacent administrative areas, such as Administrative Area 1 and Administrative Area 2, then those too would be entered as values in the Administrative Area element’s field.

Figure 25. Example showing a study area that uses an administrative area for a geographic identifier.



The last map (Figure 26), provides an example for postcode district extents. This map indicates that within Administrative Area 3, there are 13 postcode districts. If the assumption is that all these postcodes comprise the study area, the value entered would be Administrative Area 3 in the Administrative Area element’s field. If the study area covers only postcode districts CO1, CO2, CO3 and CO4, these values would be entered in the Postcode District element’s field.

Figure 26. Example showing a study area that uses postcode districts for a geographic identifier.



Reverting back to paragraph two, a second, hierarchical option was recommended, and one that is especially suited to address different the situation when different geographic identifier levels are used to define one study area’s extent. This would entail the use of any combination of geographic identifiers to define the extent.

Using the three previous maps (Figures 24, 25 and 26), as an example, the following values would be entered into the respective Nation, Administrative Area and Postcode District element fields if a study area comprised the 13 postcode districts (Figure 26).

Element	Value
Nation =	Nation A
Administrative Area =	Administrative Area 3
Postcode District =	CO1, CO2, CO3, CO4, CO5, CO6, CO7, CO8, CO9, CO10, CO11, CO12, CO13

ASCII	(American Standard Code for Information Interchange), which is a common format for text files. This is most suitable for displaying portions of documents or samples of tabular datasets and is saved in a *.txt format.
AutoCAD *.dwg	A commercial software design tool used for creating two and three-dimensional drawings. This is a tool that is commonly used for architectural designs and engineering projects. AutoCAD file format is *.dwg and can export files in the commonly used *.dxf standard format.
AtlasGIS *.agf	Commercial GIS mapping and geographic analysis software program. Atlas GeoFile format for GIS software package used primarily for viewing maps and demographic datasets.
*.dbf	This is a data file format used for most database software programs.
*.dem	DEM is a raster format used by the United States Geological Survey (USGS) to record elevation information using cells to represent elevations of points on the earth's surface.
*.dlg	Digital Line Graph format used previously for United States Geological Survey (USGS) to display vector cartographic information. Now replaced with an SDTS format.
*.dgn	See IGDS.
.dxf	The Drawing Exchange Format (.dxf) enables the interchange of drawings between AutoCAD and other programs. These files can either be ASCII or binary formats.
ENVI *.hdr	A commercial image processing software tool, ENVI uses the *.hdr file format.
ERDAS IMAGINE *.img *.lan *.trl	The file formats for ERDAS IMAGINE, a commercial imagery processing software tool. The *.trl file is the colour map extension.
ER Mapper *.ers	The file format for ER Mapper, a commercial imagery processing software tool.
ESRI Arc/Info *.e00	Commercial GIS mapping and geographic analysis software program. An Arc/Info dataset comprises a set of binary, proprietary files that cannot be interchanged with other GIS software programs. Files (coverages) can be converted to the *.e00 format extension for transfer to Arc/Info programs on other operating systems. The ESRI *.e00 interchange data format allows all spatial and descriptive information for

vectors and rasters to be combined into a single ASCII file. The file can be used to move themes into and out of ESRI software.

ESRI ArcMap

***.lyr** Commercial GIS mapping and geographic analysis software program. ArcMap, or ArcView 8.x series have several file formats related specifically to this program. The layer (*.lyr) file converts and stores source data information (e.g: shapefiles) for use in ArcView 8.x. The project file (*.mxd) stores all the files and maps created in an open project session. This includes all layer and source data files.

ESRI ArcView

***.shp** Commercial GIS mapping and geographic analysis software program. Mapping and
***.shx** geographic analysis software program file formats. A shapefile stores non topological
***.dbf** geometry and attribute information for the spatial features in a data set. A shapefile
***.prj** consists of a set of 3 mandatory files, along with several optional files. Each file in the set shares the shapefile name with a different extension. The main file (*.shp) stores the geometry and must always have an index file (*.shx). A dBASE file (*.dbf) stores all the attributes of the shapes in the main file. Additionally, a projection file (*.prj) stores the projection information.

GeoTIFF A GeoTIFF represents a geo-referenced image file. It contains the geospatial information (such as projection, datum, etc.) for a *.tif file.

***.hdf** Hierarchical Data Format is a physical file format for storing scientific data. Many raster and image datasets use this format and numerous commercial image processing software packages support it.

IDRISI A Clark Labs GIS product, IDRISI raster image consists of at least two files; one the
***.img** *.img (image) file and the other a header *.doc file containing spatial reference
***.vec** information. Clark Labs also offer a product for creating vector GIS datasets. Two
***.dvc** files are generated for vector datasets using *.vec and *.dvc extensions.

Intergraph Commercial GIS mapping and geographic analysis software program.
***.dgn**

Landsat Earth-orbiting satellites (NASA) that provide panchromatic and multi-spectral imagery for a wide range of applications. Landsat satellites 4 and 5 imagery can also be distributed using seven files that constitute separate wavelength bands, which can be collated and processed to produce single, composite images. Imagery can also be distributed as header, image and leader files or include the formats listed under satellite imagery as well as other raster formats. Current Landsat 7 uses an *.hdf file format.

Microstation Bentley Microstation's internal format data. Also known as IGDS (Interactive
***.dgn** Graphic Design Software), which is the internal format.

MapInfo Commercial GIS mapping and geographic analysis software program interchange file
***.mid** formats.
***.miff**

MOSS	Map Overlay Statistical System (MOSS) is a public domain GIS format. This is a non-topological formats for vector data with translators to several common spatial data formats.
MrSID *.sid	MrSID is an acronym for Multi-resolution Seamless Image Database. This software product is a image compressor that is used for very large raster image files. It provides high compression while maintaining image quality. Many GIS software packages support its file format.
*.ntf	The UK National Transfer Format (NTF) represents the Ordnance Survey's file format for some of their digital cartographic products.
*.pcx	PCX is a raster format that is commonly produced using scanners and computer software drawing programs. The Ordnance Survey's colour raster maps are available in this format.
*.png	The P ortable N etwork G raphic (PNG) format provides a portable, legally unencumbered, well-compressed, well-specified standard for lossless bitmapped raster files. It is meant as a replacement for GIF and supports a large range of bit depths, from monochrome all the way to 64-bit colour.

PCI Geomatics

*.pix *.gav	Commercial GIS mapping, geographic analysis and image processing software tool.
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Raster

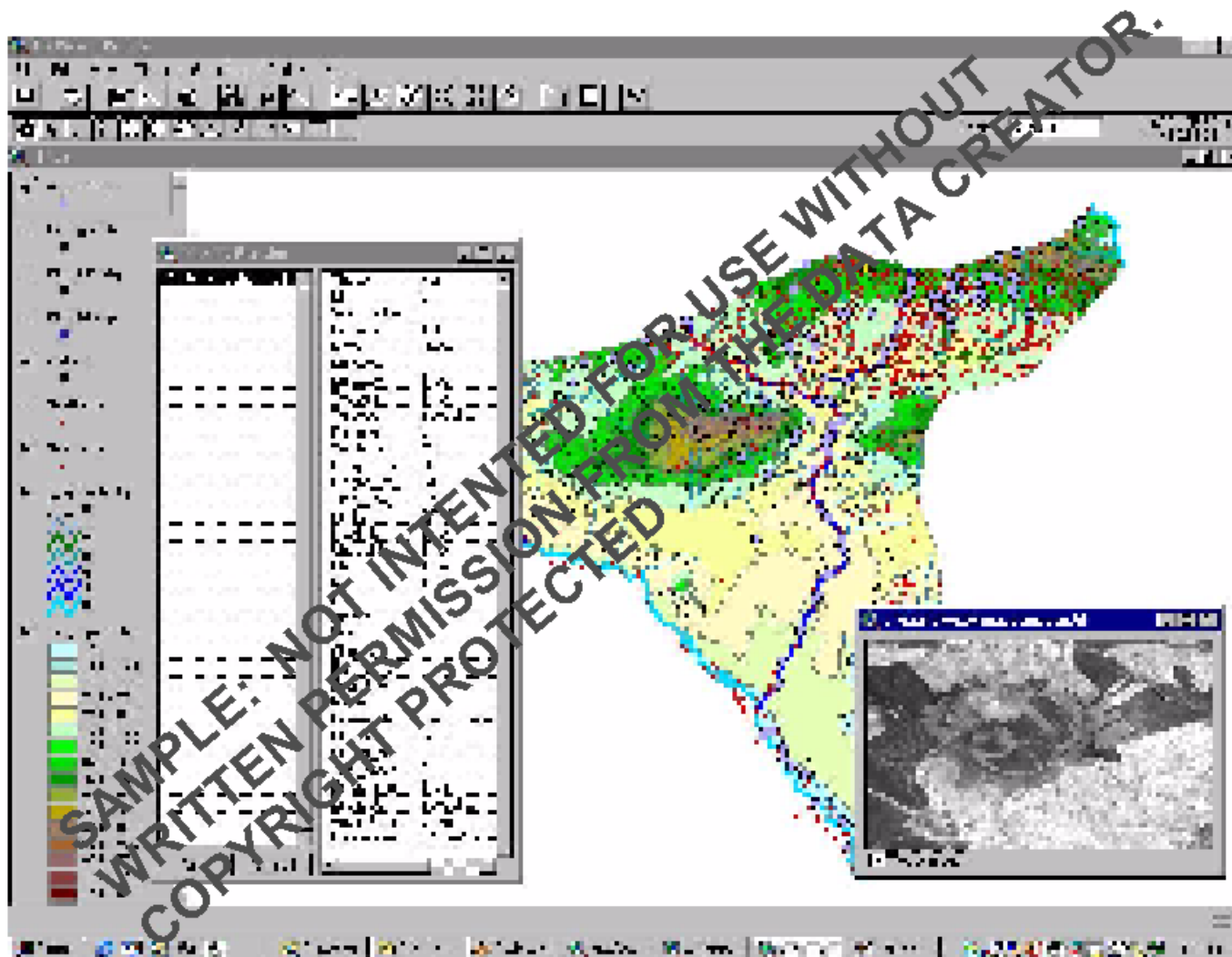
*.bmp *.cgm *.gif *.jpeg *.tiff	Bitmap (*.bmp) is a standard format for storing RGB graphics data. This format also supports a wide range of RGB image data, which can also be stored as compressed files. Computer Graphics Metafile (*.cgm) is an ISO/IEC standard format for storing and transferring vector graphics). Less commonly used in comparison to JPEG and TIFF. The *.gif file format refers to Graphics Interchange Format, which is a bitmap graphic format used frequently for images on the World Wide Web. It is also a common format used for scanned images. It also supports colour and various resolutions and files can be stored using compression. Joint Photographic Experts Group (*.jpeg) is not a file format, but rather a compression method that is used in file formats such as TIFF or JFIF, but saves graphic images as *.jpeg or *.jpg files. Probably the most suitable file format to use because of its compression method, which accounts for smaller file sizes. The Tag Image File Format (*.tiff) is a common public domain image file format that is supported by many graphic applications and saves graphic images as *.tif or *.tiff files. File size tends to be larger than the JPEG file format.
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Satellite Imagery Formats

*.bil	B and I nterleaved by L ine, B and I nterleaved by P ixel and B and S equential. Not formats,
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*.bip *.bsq	but schemes for storing the pixel values of raster images. Commonly associated with earlier Landsat and SPOT satellite imagery.
SDTS	SDTS (S patial D ata T ransfer S ystem) represents a new transfer format developed by the US government to replace the *.dlg format. The SDTS was designed to handle all types of geographic data including vector and raster datasets.
SPOT *.dat	French satellite company (Satellite Pour l'Observation de la Terre) that provides satellite panchromatic and multi-spectral imagery for a wide range of applications.
Surfer *.srf	Surfer is a commercial software product used for contouring and 3D surface mapping. It converts data into outstanding contour, surface, wireframe, vector, image, shaded relief, and post maps.
*.tfw	A world file which accompanies the *.tif file. It contains spatial information about the data associated with the *.tif file.

Figure 27. Example of a dataset sample in jpeg format.



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This graphic (Figure 27) illustrates one means to submit a sample for potential users to view. This example provides map, database and satellite samples in a bitmap file format. Text is added across the graphic to protect it against copy screen conversion. This sample and text are presented too as only an example. It will be to the metadata creator or data producer to decide which disclaimers and warnings are most suitable to include and should confer with a consul if deemed necessary.

6.0 Bibliography

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