

Guidance Note on using ArcGIS 9.1 to provide UK GEMINI 1.0 metadata for English Heritage

Introduction

In order to promote good data management, English Heritage aims to maintain UK GEMINI 1.0 compliant discovery level metadata for all its GIS data. This includes data that it creates itself, acquires from third parties or receives as the output from a project or commission.

Discovery level metadata describes the data set, how and when the data was captured, its subject classification and geographical extent as well as contact and supply details.

The UK GEMINI standard is the UK's national metadata standard for geospatial information. It is derived from the 'ISO19115 Geographic Information – Metadata' standard and the e-Government Metadata Standard (e-GMS).

For further information, on the UK GEMINI 1.0 standard please refer to the following document:

UK GEMINI Standard Version 1.0. A Geo-spatial Metadata Interoperability Initiative (e-Government Unit, Cabinet Office, October 2004] http://www.gigateway.org.uk/metadata/pdf/UK_GEMINI_v1.pdf

English Heritage's corporate GIS data is stored in ESRI's ArcSDE 9.1. This guidance note provides guidance on how to use ArcCatalog 9.1 to complete a UK GEMINI compliant metadata record.

A UK GEMINI compliant metadata record consists of a number of attributes, some mandatory and some discretionary. It is expected that users will supply as many of the attributes as possible. All mandatory attributes must be supplied otherwise the record will not be UK GEMINI compliant.

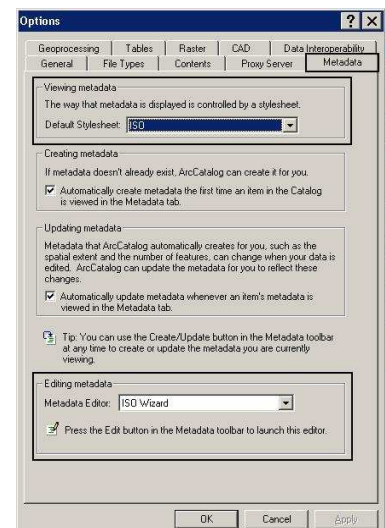
1) Setting up the ArcCatalog 9.1 ISO Metadata Wizard

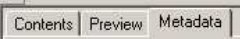

This process uses the 'ISO Metadata Wizard' tool as found in ArcCatalog. If you do not have this tool activated, you should do the following:

1.1 In ArcCatalog, go to 'Tools>Options' and select the 'Metadata' tab.

1.2 Change the 'Viewing Metadata > Default Stylesheet' to 'ISO'.

1.3 Change the 'Editing Metadata > Metadata Wizard' to 'ISO Wizard'.



To open the ISO wizard, click on the dataset that you wish to create metadata for, click on the metadata tab  then click on the 'Edit Metadata' button .

2) Creating a UK GEMINI compliant metadata record

The wizard consists of a number of sections which identify the fields which need to be completed.

Please note: Certain fields will be identified as mandatory within the ISO wizard. These are not the same as the mandatory fields required for UK GEMINI compliance. The following notes indicate which of the ISO fields are mandatory for UK GEMINI.

You do not have to complete each section before moving on to the next. You can navigate back and forth using the 'back' and 'next' buttons or by clicking on the subject heading on the left hand side.

The ISO Wizard is not case sensitive – please use upper and lower case as appropriate.

Each section will now be described in terms of which fields need to be completed, either as mandatory or discretionary. The ISO Wizard field name is given first, followed by the UK GEMINI field name in italics. Where there is not a direct equivalent between the ISO and UK GEMINI fields, this will be indicated.

The example shown here is for the English Heritage data set 'World Heritage Sites'. Mandatory fields are highlighted in red, discretionary fields in black.

2.1 General Information - Title

Title / Title
[MANDATORY]
Free Text

Enter the name that the data set is known by eg. Old County Number Monuments, Historic OS 1:10 560 scale mapping, etc.

Alternative Titles / Alternative Title
[DISCRETIONARY]
Free Text

Enter any additional titles that the data set may also be known by eg. OCN Monuments, County Monuments, Pre-War County Series Mapping, etc.

2.2 General Information – Creation Date and language

When was the data set first created? / Dataset Start Date
[DISCRETIONARY]
Format - 'ddmmyyyy', 'mmyyyy' or 'yyyy'

Please enter the date that the dataset was first created.

What language is used in the data? / Data Language
[MANDATORY]
Auto Generated by ArcCatalog

This value can be overwritten if necessary. The following values are permitted: English, Welsh, Gaelic (Irish), Gaelic (Scottish), Cornish.

2.3 General Information – Abstract

Abstract / Abstract
[MANDATORY FIELD]
Free Text

Describe the contents and nature of the data set. Please keep the description as brief and succinct as possible. Do not go into any technical detail or provide any information about data creation, supply and formats as these are described elsewhere.

2.4 General Information – Metadata Author

There is no requirement to complete the Metadata Author details. However, you must enter at least one set of 'Point of Contact' details.

2.5 General Information - Point of Contact overview and Point of Contact 1

Change the first radio button to 'No' and then ensure the second is set to 'Yes' (please note, this should be done automatically when the first is set to 'No').

Point of Contact / Originator
[MANDATORY]
Free Text

Enter all the contact details as specified in the screen for the main point of contact for the dataset. Ensure that the 'Function in relation to the dataset' field is changed to 'originator'.

2.6 History – Dataset History

Dataset History / Lineage
[DISCRETIONARY]
Free Text

Describe how the dataset was compiled, and its sources. Please keep the information succinct,

but ensure that a user will have enough information to make a judgement regarding the quality of the data in terms of how it has been derived.

2.7 Dataset Identification – Themes or Categories

Themes or Categories / Topic Category [MANDATORY]

Category Pick List

Values: Please see Appendix Two

Tick the boxes for the most relevant broad topic headings that describe the dataset.

ISO Metadata Wizard

Themes or categories

Which of the following themes or categories best describe the content of the dataset?

- ☐ Administrative and political boundaries
- ☐ Agriculture and farming
- ☐ Atmosphere, climatology and meteorology
- ☐ Biologic and ecologic
- ☐ Business and economic
- ☐ Cadastral and land planning
- ☒ Cultural, society and demographic
- ☐ Elevation and derived products
- ☒ Environment and conservation
- ☐ Facilities and structures
- ☐ Geological and geophysical
- ☐ Human health and disease
- ☐ Imagery, base maps and land cover

Hide Contents >> < Back Next > Finish Cancel

2.8 Dataset Identification – Additional Characteristics

This will allow you to record information on the data set subject, as well as its scale, update regime and use restrictions.

Tick the boxes for Keywords, Maintenance and Restrictions. You will then be taken to these additional pages in turn.

ISO Metadata Wizard

Additional characteristics

Use these pages to specify various characteristics of the dataset that may be used by others to search for and identify this data.

Which types of identification information do you want to specify for this dataset?

- ☒ Keywords for the subjects represented by the data
- ☐ Scale [scale the data was collected at, and recommended display scale]
- ☒ Maintenance information [frequency and dates of updates to the data]
- ☒ Restrictions on use of the data

When you click Next, pages will appear for you to enter the information for each of the types you chose above.

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2.9 Dataset Identification – Keywords Overview

Check the box to record the dataset Theme or Subject. Other keywords can be entered by checking the appropriate boxes, however, ensure that you are using a recognised thesaurus set of terms in order to ensure consistency.

ISO Metadata Wizard

Keywords overview

The ISO standard identifies five types of keyword. Which types are appropriate to the dataset?

- ☒ Theme keywords: Identify subjects or topics. For example: water, soils.
- ☐ Place keywords: Geographic locations. For example: Canada, Indian Ocean.
- ☐ Temporal keywords: Specific periods in time. For example: Twentieth century, Iron age.
- ☐ Stratum keywords: Layers in the environment. For example: Palaeozoic, Troposphere.
- ☐ Discipline keywords: Branches of instruction or learning. For example: Geography, Chemistry.

When you click Next, pages will appear for you to enter the keyword types you chose above.

Hide Contents >> < Back Next > Finish Cancel

Theme Keywords / Subject [MANDATORY] Thesaurus Controlled

Only record the most relevant Subject headings that describe the dataset.

Please use the 'Integrated Public Sector Vocabulary' (IPSV) from the e-Government Unit, at www.esd.org.uk/standards/ipsv/.

ISO Metadata Wizard

Theme keywords 1

Theme keywords identify subjects or topics. Enter any themes which apply to the dataset here.

- ☒ Heritage
- ☒ World Heritage Sites

If these theme keywords are defined in a formally registered thesaurus or other authoritative source of keywords, then give the name and date of this list here:

Day: <none> Month: <none> Year: <none> Date Type: <none>

Do you wish to enter another set of theme keywords, such as those relating to another thesaurus?

☐ Yes ☒ No

Hide Contents >> < Back Next > Finish Cancel

2.10 Dataset Identification – Maintenance Information

How often is the dataset updated? / Frequency of Update [MANDATORY]
Drop Down Pick List
Values: Continually; Daily; Weekly; Fortnightly; Monthly; Quarterly; Biannually; Annually; As needed; Irregularly; Not Planned; Unknown.

Please select the option which best describes how frequently the data set is updated.

When was the dataset last revised? / Dataset Reference Date [MANDATORY]
Format - 'ddmmyyyy', 'mmyyyy' or 'yyyy'

Enter the date of this dataset ie. the date that the copy of the data was taken.

2.11 Dataset Identification – Restrictions Overview

Check the boxes for both 'Use Restrictions' and 'Legal Restrictions'.

2.12 Dataset Identification – Restrictions Overview

Use Restrictions / no GEMINI equivalent Free Text

There are a number of fields in the UK GEMINI standard which do not form part of the ISO wizard.

Please note, although these attributes are discretionary, the information is required by English Heritage to complete the metadata record and will be transcribed across to UK GEMINI when the record is converted.

The 'Use Restrictions' free text box should be used to record the following attributes:

2.12.1 Dataset End Date

Format - 'ddmmyyyy', 'mmyyyy' or 'yyyy'

If the dataset is complete, record the date that the data capture was completed.

2.12.2 Extent

Controlled Pick List

Permitted values: CHA – Channel Islands; ENG – England; IOM – Isle of Man; NIR – Northern Ireland; SCT – Scotland; WLS - Wales

Record the name or names of the country covered by the dataset. If the dataset contains offshore data, please use the nearest associated land area. Where a dataset covers a smaller area, such as a region, county or a district, it is permitted to enter the region/county/district etc. name in addition to the country code.

2.12.3 Presentation Type

Controlled Pick List

For Permitted values please see Appendix Three.

Enter the value which best describes the physical form of the dataset.

2.12.4 Spatial Resolution

Free Text

Enter a numerical value for the precision to which the data is captured. Please note: this is equivalent to the ground sample distance. For data captured in the field, it will be the precision to which the data is captured. For image data, it will be the resolution of the image. For data taken from maps, it will be the positional accuracy of the map.

2.12.5 Additional Information Source

Free Text

Record the location of any additional sources, teams, individuals etc which may assist in describing the data.

2.12.6 Browse Graphic

Free Text

Record the location of an image giving an example of the data or a map of the dataset.

2.12.7 Online Resource

Free Text

Record any URLs of relevant websites or pages which may describe the data.

2.12.8 Web Address

Free Text

Record the web address associated with the distributor of the dataset.

2.13 Dataset Identification – Restrictions Overview

Legal Restrictions / Use Constraints

[DISCRETIONARY]

Category Pick List

Legal Restrictions / Access Constraints

[DISCRETIONARY]

Category Pick List

ISO Metadata Wizard

Legal restrictions

Indicate if any of these legal restrictions apply to the dataset:

Data access restrictions	Data use restrictions
<input checked="" type="checkbox"/> Copyright	<input checked="" type="checkbox"/> Copyright
<input type="checkbox"/> Patent	<input type="checkbox"/> Patent
<input type="checkbox"/> Patent pending	<input type="checkbox"/> Patent pending
<input type="checkbox"/> Trademark	<input type="checkbox"/> Trademark
<input checked="" type="checkbox"/> License	<input checked="" type="checkbox"/> License
<input checked="" type="checkbox"/> Intellectual property rights	<input checked="" type="checkbox"/> Intellectual property rights
<input type="checkbox"/> Restricted	<input type="checkbox"/> Restricted

Do any other legal restrictions apply? If so, then list these here:

< Back Next > Finish Cancel

Check any of the boxes which apply in terms of any restrictions or licences applied to the dataset and its use – eg. Intellectual Property Rights, Licence, copyright.

2.14 Distribution Information – Distributor

Distributor's Name / Distributor Contact Title

[MANDATORY]

Free Text

Distributor's Organisation / Name of Distributor

[MANDATORY]

Free Text

Please complete ALL the details for the person or team responsible for distributing the data set.

2.15 Distribution Information – Publication format

Name of the format / Data Format

[DISCRETIONARY]

Please enter the most common format that the dataset is supplied in. Please note that ArcCatalog will automatically populate this field with the format of the data as stored, eg SDE Feature Class, ESRI Shapefile.

Additional formats may be added by changing the radio button in the bottom right hand corner to 'Yes'.

2.16 Distribution Information –Off-line Delivery Options

Select the medium on which the data set is available / Supply Media

[DISCRETIONARY]

Drop Down Pick List

Values: <none>; CD-Rom; DVD; DVD-Rom; 3.5 inch floppy disk; 5.25 inch floppy disk; 7 track tape; 9 track tape; 3480 cartridge; 3490 cartridge; 3580 cartridge; 4mm cartridge tape; 8mm cartridge tape; 0.25 inch cartridge tape; digital Linear Tape; Satellite Link; Telephone Link; Hardcopy

Choose the most appropriate or common delivery option that the data is supplied in.

This completes the metadata entry using the ArcCatalog ISO Wizard. By completing the above steps, you will have created a basic UK GEMINI compliant metadata record.

Make sure that you click 'Finish' to save your data entry or edits. Clicking 'Cancel' will lose any changes you have made.

Spatial Extent Information

Please note: the spatial extent attributes are not able to be edited using the ISO wizard in ArcCatalog.

Extent in Decimal Degrees / Spatial Reference System

[MANDATORY]

Auto Generated by ArcCatalog

This is the spatial reference system by which the spatial extent is recorded. This will be Lat/Long. It is not the Spatial Reference System of the dataset itself.

West Longitude / West Coord/Longitude

[MANDATORY]

Auto Generated by ArcCatalog

East Longitude / East Coord/Longitude

[MANDATORY]

Auto Generated by ArcCatalog

North Latitude / North Coord/Latitude

[MANDATORY]

Auto Generated by ArcCatalog

South Latitude / South Coord/Latitude

[MANDATORY]



Auto Generated by ArcCatalog

The spatial extent of the data set is calculated automatically by ArcCatalog – this is done by calculating the bounding rectangle that surrounds the data and recording its latitude and longitude (in decimal degrees).

3 Supplying your Metadata

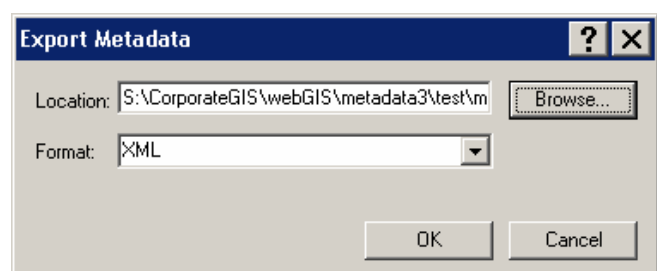
Metadata must be supplied as a separate .xml file. To export the metadata from ArcCatalog in .xml format, you should do the following:

3.1 Click on the dataset you wish to export the metadata for, click on the metadata tab

 then click on the 'Export Metadata' button .

3.2 In the Export Metadata dialog box, select the location for your file then change the format type to XML (the last option).

3.3 Click OK to export the metadata.



4 Data Dictionary

As well as maintaining metadata, English Heritage also keeps a Data Dictionary document for each data set, describing the attributes which are stored with the data. This allows users to better understand the data and what information it contains.

If your data set contains attribution, please supply a Data Dictionary document which contains the following information for each attribute:

Field/Column Name	Suitable Alias	Description
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This document should be supplied in MS Word format.

The following is an example of a Data Dictionary compiled for the English Heritage World Heritage Site data.

Field Name	Suitable Alias	Description
U_ID	NUMBER	EH assigned Unique reference number
NAME	NAME	Title of World Heritage Site
DESIGNATIO	DESIG_DATE	Date of Designation by UNESCO
CAPTURE_SC	CAP_SCALE	Scale at which the feature was captured
EASTING	EASTING	Centroid Easting
NORTHING	NORTHING	Centroid Northing
AREA_Ha	AREA_HA	Area of the polygon in Hectares

If you have any questions regarding this guidance note or creating compliant metadata for English Heritage, please contact the Corporate GIS Team at gis@english-heritage.org.uk.

English Heritage Corporate GIS Team
November 2007

Appendix One

UK GEMINI compliant metadata attributes and their ArcCatalog equivalents

UK GEMINI	ArcCatalog ISO19115
UK GEMINI mandatory fields are indicated in red	
Data Description	
Title	General – Title
Alternative Title	General – Alternative Title
Originator	General – Point of Contact
Abstract	General – Abstract
Topic Category	Dataset Identification – Themes or categories
Subject	Dataset Identification- Keywords overview – Theme Keywords
Dataset Language	General – Data Language
Data Capture Period	
Dataset Start Date	General – Creation Date
Dataset End Date	NOT FOUND
Dataset Reference Date	Dataset Identification – Maintenance Information – Dataset Revised date
Frequency of Update	Dataset Identification – Maintenance Information – Dataset Updated?
Date of Update of Metadata	Auto generated by ArcCatalog
Data Geographic Extent	
Extent	NOT FOUND
Spatial Reference System	Auto generated by ArcCatalog
North Coord/Longitude	Auto generated by ArcCatalog
South Coord/Longitude	Auto generated by ArcCatalog
West Coord/Latitude	Auto generated by ArcCatalog
East Coord/Latitude	Auto generated by ArcCatalog
Data Access	
Access Constraints	Dataset Identification – Restrictions Overview – Legal Restrictions – Data Access
Use Constraints	Dataset Identification – Restrictions Overview – Legal Restrictions – Data Use
Presentation Type	NOT FOUND
Spatial Resolution	NOT FOUND
Spatial Representation Type	Auto generated by ArcCatalog
Supply Media	Distribution Information – Off-line Delivery Options
Data Format	Auto generated by ArcCatalog
Spatial Reference System	Auto generated by ArcCatalog
Miscellaneous	
Additional Information Source	NOT FOUND

Browse Graphic	NOT FOUND
On line Resource	NOT FOUND
Lineage	History – Dataset History
Data Supplier Details	
Distributor Contact Title	Distribution Information – Distributor's Name
Name of Distributor	Distribution Information – Distributor's Organisation
Postal Address	Distribution Information – Distributor's Address – Delivery Point + City + State + Postcode
Telephone Number	Distribution Information – Distributor's Address – Telephone Number
Facsimile Number	Distribution Information – Distributor's Address – Facsimile Number
Email	Distribution Information – Distributor's Address – E-mail address
Web Address	NOT FOUND

Appendix Two

Permitted Values for Section 2.7 Themes or Categories.

Taken from the following document: Metadata Guidelines for Geospatial Datasets in the UK. Part 2: Creating Metadata using UK GEMINI. Version 1.0, DCLG, June 2006.

<http://www.gigateway.org.uk/pdf/guidelines/MetadataGuidelines2.pdf>

ArcCatalog / ISO19115 name	UK GEMINI Name	Description
Administrative and Political Boundaries	Boundaries	Legal land descriptions Examples: political and administrative boundaries
Agriculture and Farming	Farming	Rearing of animals and/or cultivation of plants Examples: agriculture, irrigation, aquaculture, plantations, herding, pests and diseases affecting crops and livestock
Atmosphere, Climatology and Meteorology	Climatology / Meteorology / Atmosphere	Processes and phenomena of the atmosphere Examples: cloud cover, weather, climate, atmospheric conditions, climate change, precipitation
Biologic and Ecologic	Biota	Flora and/or fauna in natural environment Examples: wildlife, vegetation, biological sciences, ecology, wilderness, sea life, wetlands, habitat
Business and Economic	Economy	Economic activities, conditions and employment Examples: production, labour, revenue, commerce, industry, tourism and ecotourism, forestry, fisheries, commercial or subsistence

		<p>hunting, exploration and exploitation of resources such as minerals, oil and gas</p>
Cadastral and Land Planning	Planning / Cadastre	<p>Information used for appropriate actions for future use of the land</p> <p>Examples: land use maps, zoning maps, cadastral surveys, land ownership</p>
Culture, Society and Demographic	Society	<p>Characteristics of society and cultures</p> <p>Examples: settlements, anthropology, archaeology, education, traditional beliefs, manners and customs, demographic data, recreational areas and activities, social impact assessments, crime and justice, census information</p>
Elevation and Derived Products	Elevation	<p>Height above or below sea level</p> <p>Examples: altitude, bathymetry, digital elevation models, slope, derived products</p>
Environment and Conservation	Environment	<p>Environmental resources, protection and conservation</p> <p>Examples: environmental pollution, waste storage and treatment, environmental impact assessment, monitoring environmental risk, nature reserves, landscape</p>
Facilities and Structure	Structure	<p>Man-made construction</p> <p>Examples: buildings, museums, churches, factories, housing, monuments, shops, towers</p>
Geological and Geophysical	Geoscientific Information	<p>Information pertaining to earth sciences</p> <p>Examples: 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</p>
Human Health and Disease	Health	<p>Health, health services, human ecology, and safety</p> <p>Examples: disease and illness, factors affecting health, hygiene, substance abuse, mental and physical health, health services</p>
Imagery, Base Maps and Land Cover	Imagery / BaseMaps / EarthCover	<p>Base maps</p> <p>Examples: land cover, topographic maps, imagery, unclassified images, annotations</p>
Inland Water Resources	Inland Waters	<p>Inland water features, drainage</p>

		systems and their characteristics Examples: rivers and glaciers, salt lakes, water utilization plans, dams, currents, floods, water quality, hydrographic charts
Location and Geodetic Networks	Location	Positional information and services Examples: addresses, geodetic networks, control points, postal zones and services, place names
Military and Intelligence	Intelligence Military	Military bases, structures, activities Examples: barracks, training grounds, military transportation, information collection
Oceans and Estuaries	Oceans	Features and characteristics of salt water bodies (excluding inland waters) Examples: tides, tidal waves, coastal information, reefs
Transportation Networks	Transportation	Means and aids for conveying persons and/or goods Examples: roads, airports/airstrips, shipping routes, tunnels, nautical charts, vehicle or vessel location, aeronautical charts, railways
Utility and Communication Networks	Utilities / Communication	Energy, water and waste systems and communications infrastructure and services Examples: 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

Appendix Three

Permitted Values for Section 2.12.3 Presentation Type

Taken from the following document: Metadata Guidelines for Geospatial Datasets in the UK. Part 2: Creating Metadata using UK GEMINI. Version 1.0, DCLG, June 2006.

<http://www.gigateway.org.uk/pdf/guidelines/MetadataGuidelines2.pdf>

Name	Description
document digital	digital representation of a primarily textual item (can contain illustrations also)
document hardcopy	representation of a primarily textual item (can contain illustrations also) on paper, photographic material, or other media
image digital	likeness of something acquired through sensing and stored in digital format
image hardcopy	likeness of something acquired through sensing and reproduced on paper,

	photographic material, or other media for use directly by the human user
map digital	map represented in raster or vector form
map hardcopy	map printed on paper, photographic material, or other media
model digital	multi-dimensional digital representation of a feature, process, etc.
model hardcopy	3-dimensional, physical model
profile digital	vertical cross-section in digital form
profile hardcopy	vertical cross-section printed on paper, etc.
table digital	digital representation of facts or figures systematically displayed, especially in columns
table hardcopy	representation of facts or figures systematically displayed, especially in columns, printed on paper, photographic material, or other media
video digital	digital video recording
video hardcopy	video recording on film