

# ShareGeo – Discovering and sharing geospatial data

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## Introduction

This article discusses a new facility being offered as part of the EDINA<sup>1</sup> Digimap service. The facility is called ShareGeo and provides a mechanism for Digimap users to search and download user contributed geospatial datasets. It also provides a facility for users to upload their own geospatial content to share with others.

## Background

EDINA is a JISC National Datacentre based at the University of Edinburgh and provides on-line services to universities and colleges in the UK. A number of these services involve the provision of geospatial resources, either as maps or as data (or both), including: Digimap, UKBORDERS, agcensus and Go-Geo!.

A table showing the existing core geospatial resources from EDINA is shown below:

Collection or Service	Data Available
Digimap - Ordnance Survey Collection	A range of Ordnance Survey GB data products from large-scale OS MasterMap® to small scale Strategi® datasets.
Marine Digimap	Hydrographic data for UK waters from SeaZone.
Geology Digimap	British Geological Survey datasets from 1:50,000 to 1:650,000.
Historic Digimap	Scanned Ordnance Survey maps from 1846 to 1996 from Landmark Information Group.

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<sup>1</sup> <http://edina.ac.uk/>

UKBORDERS	Funded by the Economic and Social Research Council, UKBORDERS provides a wide range of boundary datasets e.g. postcode, census and administrative boundaries.
agcensus	Agricultural census data based on grid squares.

Development of the ShareGeo facility was funded by JISC and is now being run within Digimap. ShareGeo is a follow-on from the GRADE<sup>2</sup> (Geospatial Repository for Academic Deposit and Extraction) project which looked at the technical, cultural and legal issues around sharing geospatial data and included the development of a demonstrator repository that highlighted the desire from a wide range of users for a formal geospatial data sharing facility.

### What is ShareGeo?

ShareGeo is a geospatial data sharing facility within Digimap, accessible to registered Digimap users. The data offered by ShareGeo can include both geospatial data derived from datasets already licensed through Digimap, as well open-access data collected or generated by individuals and submitted for others to re-use.

There is no restriction on the geographical extent or coverage of a dataset; it can be for a very small area or be a global dataset and it can be for anywhere in the world.

### What can I do with ShareGeo?

**1) Find geospatial datasets** – users can search for user-contributed, research generated and derived datasets using a variety of search mechanisms including keywords, titles, contributors, browsing or by using a map search interface.

**2) Re-use geospatial datasets** – users can download datasets for research and teaching in the original format that they were deposited in (including TIFF, Shapefile, KML and CSV). Downloaded data can be used in a variety of GIS applications and manipulated, visualised, combined and made into maps.

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<sup>2</sup> <http://edina.ac.uk/projects/grade/>

**3) Share geospatial datasets** – users can contribute their own datasets to ShareGeo. A simple to use step-by-step process guides users through the process of contributing geospatial datasets.

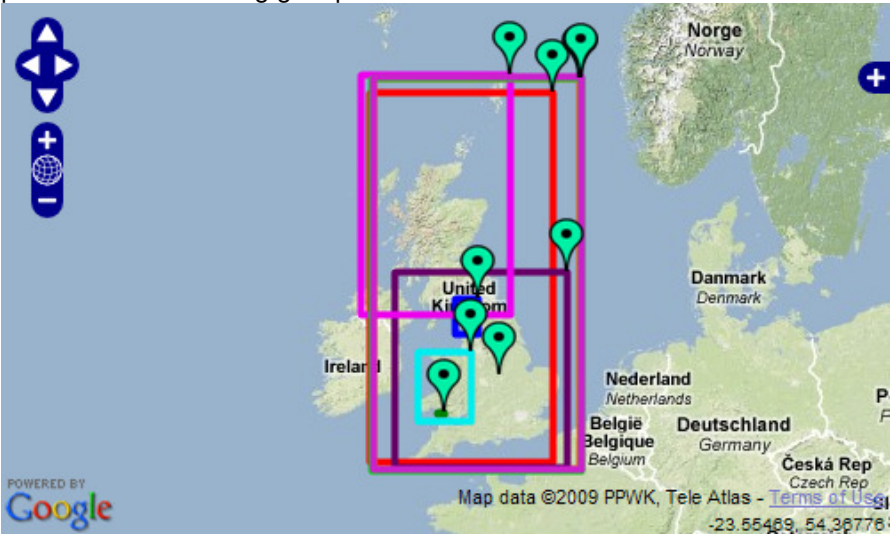


Figure 1: Screenshot of map search showing dataset outlines

**What datasets are in ShareGeo?**

The following table gives some example datasets that are currently available within ShareGeo and shows the range of dataset types and applications that can be contributed.

Table of example datasets currently in ShareGeo:

Dataset Type	Example datasets
Reference datasets	National grid squares at various resolutions, GB postcode area boundaries, national boundaries etc.
Historical datasets	Digitised raster and vector datasets from historical sources, including London in the 19 <sup>th</sup> century.
Freely available data converted into more easily accessible formats	DCW (Digital Chart of the World) data originally in .e00 format converted to Shapefiles for the UK.

Derived boundary datasets	Health region boundaries, government office boundaries, national park boundaries etc.
User collected data	GPS track logs collected using satellite navigation systems.
Geo processed aerial or satellite images	CORONA and Landsat satellite images.
Field survey data	Archaeological project datasets from the Isle of Mull.
Selections from existing OS, geology or marine datasets	Transportation network for Scotland selected from OS Strategi dataset.

### Who can use ShareGeo?

ShareGeo is accessible to all Digimap users who are registered for the Ordnance Survey, Marine or Geology Digimap Collections. Institutions must subscribe to one or more of these Collections in order to allow their members to register with these Collections. Users who have access only to Historic Digimap cannot use ShareGeo because the user information required for access to ShareGeo is not available. Use of ShareGeo is free and does not require any additional institutional subscription or registration – just an individual’s agreement to the terms of use of the facility.

### Why should you use ShareGeo?

- To increase the visibility of your research
- To share datasets with colleagues and peers
- To find datasets you may be interested in
- To save time by re-using existing datasets that others have created
- To create a record of your data

### Some technical details about ShareGeo

ShareGeo uses the DSpace open source repository software (currently version 1.5.1) with the Manakin user interface. The OpenLayers JavaScript mapping functionality has been incorporated into the search capabilities so that the user can search for datasets spatially using Google Maps as background mapping. The facility also uses the GDAL/OGR open source data translation software to validate and automatically extract metadata from contributed datasets.

### The complexities of licensed geospatial data

One of the primary aims of ShareGeo is to provide users with confidence that licensing restrictions on data are respected and that they are 'allowed' to share data with other users through ShareGeo. Much of the data in use for teaching and research has been obtained through one or more of the Digimap Collections (Ordnance Survey, Marine, Geology or Historic). These data have strict licensing requirements associated with them. Of particular concern is data that has been derived from (or based on) licensed data and therefore carries the same (or similar) restrictions as the original data. ShareGeo respects these licensing restrictions as long as the original contributor of the data accurately specifies the source of the data. Contributors are also able to specify their own licence to be associated with a dataset, for instance a Creative Commons licence for data they have collected themselves and that they wish to share with others in an open way.

### **What metadata is available?**

Qualified Dublin Core metadata is used to describe items, with many of the fields automatically populated when a user contributes a dataset. The spatial extents of a contributed dataset are automatically extracted from the contributed dataset and added to the 'spatial coverage' metadata field using the DCMI Box Encoding scheme as well as being stored in a separate database table that enables subsequent searching and querying. Specific options are provided for users to select when choosing a licence to be associated with a dataset which is then stored as part of the metadata.

### **What if I can't find a dataset I'm looking for?**

If there is a dataset that you are looking for but can't find it in ShareGeo and it's not in an existing Digimap Collection, you may be able to find reference to it by using the Go-Geo!<sup>3</sup> geospatial data portal. This portal cross-searches a number of data holdings and will find and display relevant metadata records, giving details on how to access the data.

### **Issues**

As with many repositories, it is proving harder than at first anticipated to encourage users to contribute datasets to ShareGeo. This could be for a number of reasons such as the perception of licensing issues in sharing (particularly Ordnance Survey data), concern over the quality and provenance of data that might be deposited, the lack of perceived benefit to sharing or a lack of awareness of the availability of a place to put data.

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<sup>3</sup> <http://www.gogeo.ac.uk/>

These are issues and challenges that are being addressed with continuing technical improvements and promotion of the facility.

### **How to access ShareGeo**

ShareGeo can be accessed by logging in to Digimap<sup>4</sup> and following the link on the Collections page to ShareGeo in the “Find and Share” section.

More information about ShareGeo can be found at:

<http://edina.ac.uk/projects/sharegeo/index.shtml>

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<sup>4</sup> <http://edina.ac.uk/digimap/>