



# Geospatial Engagement & Community Outreach

This leaflet provides a summary description and pointer to more information about each of the recently funded JISC (#jiscGEO) geospatial projects. These are under the oversight of GECO activity at EDINA [[geco.blogs.edina.ac.uk](http://geco.blogs.edina.ac.uk)].

## ELOGeo



The objective of this project is to enable the wider community (not just GIS experts) to make use of open source geospatial tools for solving real world problems. Currently, there is a big learning curve for new users to understand and use these technologies and if a general take-up of them is to be achieved it is necessary that an open, interactive, user friendly learning framework is developed based on case study examples. As part of the project, use cases will be developed in example domains such as transportation, flood mapping and environment management. All these three use cases build upon previous work and expertise at CGS, but the project will be open to other use cases as well.

## GEMMA



GEMMA aims to produce a single workflow for the collection, mapping, preservation, sharing and visualisation of the geospatial datasets. The ability to create a map without knowing anything about mapping. Simple as, for too long creating a map has been too complicated, there is now a vast amount of geographically tagged information available online, yet to map it you still have to have a considerable amount of computer related knowledge. Not any more, and we are not talking standard pin type maps, we will enable complex spatial mapping to be carried out at the click of mouse and a point at a file. This is what geospatial mapping should be, GEMMA aims to bring 'geo' to the masses and not in a 'neogeo' type way, simply find some data, make, mix and display a map, that's GEMMA in a nutshell.

## GeoCrimeData



This research will make use of existing geospatial data sets and perform analyses to create new, high-resolution data that will raise awareness of the potential of this information and enable complex analytical procedures to be carried out by a wide range of crime analysts and social science researchers in related fields. This project will create new geospatial datasets that will be of direct relevance to crime analysts, the police and those involved in community safety. These data will be generated from existing publically available data but will have been attributed with additional "contextual" information. This will deliver enhanced information to those currently using such data and seek to raise awareness of the usefulness of this geospatial crime data to those users who currently do not. A case study of burglary will be used to demonstrate how the data can be used to enhance analyses.

## GeoSciTeach



GeoSciTeach is developing ways to support trainee science teachers to engage with geospatial systems in their teaching activities, and improve their geo-spatial skills. The project aims to increase the use of geospatial tools in teacher training education by designing, developing, and evaluating an innovative application, using the advanced sensing functionality of mobile smartphones. The application will provide a customisable template for teachers to develop and orchestrate geo-spatial based science learning activities, which can be used within the teacher-training curriculum, and be made available as a teaching tool with associated educational resources. The project is working closely with PGCE science trainee teachers and tutors from the Institute of Education, London, who will have input into the user and technical requirements of the application; the pedagogical design of the learning activities it will be used to support; and evaluation of the application.

## Halogen 2



This project will significantly enhance the existing HALOGEN (History, Archaeology, Linguistics, Onomastics and GENetics) cross-disciplinary spatial research database established in 2010. This is used to support the multi-disciplinary 'Roots of the British' and 'Diasporas' research collaborations that seeks to interrogate evidence for the migration and/or continuity of human populations in the British Isles in the distant past. HALOGEN is now a key research tool underpinning the work of these teams. HALOGEN2 will extend the coverage of existing Portable Antiquities Scheme data in the database; add two new sources of spatial data relating to surname distributions and genetics; investigate and deploy an improved 'data extract' tool to enable researchers easier access to data; and undertake a feasibility study into the provision of a simple web-based enquiry tool. These enhancements will add significant value to this research asset.

## Interoperable Geographic Information for Biosphere Study (IGIBS)



IGIBS will create a tool that enables users to upload and instantiate an Open Geospatial Consortium Web Map Service (WMS) allowing users to view and analyse their data in combination with a range of other interoperable distributed data sources. To enable a broader range of use cases, Shibboleth will be used to secure the OWS where appropriate. End user requirements will be met by localising the project and focussing on the real geographic information needs emerging from the UNESCO Dyfi Biosphere reserve. This is collaboration between EDINA, Aberystwyth University and the Welsh Assembly Government. To achieve mutual benefits, we aim to strengthen and develop the level of integration between the UK academic Spatial Data Infrastructure (SDI) and the national SDI as expressed through the UK Location Programme. This project aims to bring long term benefits and contribute to more data being available in an interoperable form to a wider range of disciplines so they can engage in addressing research and education based upon real world needs.

## JISC G3



The JISC G3 Project – Bridging the Gap between the GeoWeb and GIS – has been set up to overcome the disconnect between using GIS for day-to-day activities and as part of research or studies. We will develop a number of web-based tools to allow students to start with the familiar (panning and browsing a web map) and move towards more advanced GIS concepts. This will allow them to then make use of the more sophisticated GIS packages that are available to them (ArcGIS, MapInfo Professional, Geomedia Professional). Rather than teach abstract concepts, the tools will focus on scenarios related to discipline-specific use-cases, highlighting areas where GIS could be useful to individual groups. The final output of the project will be a series of open-source tools and scenarios, which can then be added to by others as and when required.

## NatureLocator



The overall aim of the NatureLocator project is to develop a smart phone application for use in monitoring the spread of the Horse Chestnut Leaf Miner moth. The app will enable users to take photos of trees and their leaves where attack by the moth is suspected. These photos will automatically be tagged with geospatial and time-based information. The app will then enable the upload of the photo and its geospatial metadata to a location where people interested in the project can provide feedback upon it, primarily in terms of its biological validity (there is a superficially similar looking disease caused by a fungal species).

## Pelagios: Enable Linked Ancient Geodata In Open Systems (PELAGIOS)



Pelagios is an international consortium of projects leading research into the ancient world who have teamed up to trial ways of linking open data (LOD) that will enable scholars and enthusiasts alike to discover, visualize and make use of references to ancient places in online material. Our three primary outcomes are: 1) to define a core ontology for place references (COPR); 2) to trial this ontology on different document types (texts, maps, databases, etc) which contain information about ancient world research; and 3) to create prototype tools and services, which are easily consumable by learners, educators, researchers and the public, in order both to explore some of the uses to which this resource can be put and to demonstrate the value of a LOD approach.

## Spatio-Temporal Energy Efficiency Visualisations (STEEV)



Researchers exploring and investigating policy options on possible future states of the built environment need a simple mechanism to visually analyse and compare outcomes of different scenarios of urban energy reduction policy. This project will build a stakeholder engagement tool visualising historic, current and future energy efficiency estimates at the level of individual buildings. The project will produce modelled estimates of building energy use for the period 2000-2050 for a sample geographic area in Cardiff, South Wales and provide a web based application that allows researchers, policy makers and other stakeholders the facility to explore varying spatio-temporal patterns of energy efficiency outcomes. We will also explore a novel usage of the Memento framework by enabling 'time-travel' both backwards ('web-time') and forwards ('content-time').



The aim of U•Geo is to increase the geospatial potential of national survey data (held by the UK Data Archive) for social and humanities researchers. This means improving the existing metadata, especially enhancing the geographical descriptors and spatial references.

The Objectives of U.Geo are four-fold:

1. To provide clear information for prospective users on how survey data in the Archive collections can be linked to existing geospatial boundary data.
2. To standardised and temporal reference spatial unit metadata definitions for the Archive (so it is easier to find data that can be used in a GIS without confusion over which spatial units are relevant)
3. To scope having more data with detailed geography available for users via the Secure Data Service (SDS) or via Special Licence (SL) agreements thus allowing GIS software to be made available to SDS users (detailed geography often removed from surveys to avoid disclosure risks)
4. To review the requirements for a DDI-based Archive metadata schema profile that will be both INSPIRE and GEMINI2 compliant.

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xEvents aims to develop a web service supporting geo-aware calendars of academic events (talks, conferences, workshops, calls for papers). It is being developed in the first instance to support the existing PhilEvents service, but will be made available to third parties interested in operating similar services as well. This will increase awareness of academic events in philosophy both in the UK and abroad, which should lead to an increase in participation. Additionally, the project will:

- Enable a new level of analysis of research trends in the discipline. A better grasp of current research trends will help researchers and event organisers determine what areas of research need more (or less) attention.
- By providing a suitable dissemination channel, PhilEvents will increase the creation and consumption of videocasts and podcasts of research events, which will increase the impact of research outputs.
- xEvents will empower other communities to support similar services in a cost-efficient manner.

The overarching purpose of GECO is to foster a community(ies) of users of geospatial resources (data, services, support). Geospatial, taken in its broadest sense underpins a vast array of academic endeavour – geography represents a fundamental organising axis for information. Space (and time) are fundamental aspects of most resources and activities and the purpose of GECO is to help:

- foster self-help within identifiable communities of interest that emerge from the recent JISC geospatial funding call;
- increase the use of geospatial tools, infrastructure (data and services) and information for the wider benefit of the teaching, learning and research communities;
- to collate exemplars of use and to establish a trajectory for the future embedding of geospatial resources within research, teaching and learning landscapes;
- to identify and promote best practice (such as standards, interoperability, machine interfaces) and to provide a means for knowledge transfer from specialist to less spatially literate users and domains;
- assist with the maturation of the UK academic Spatial Data Infrastructure (SDI) and ensure that location (space/geography) is championed across sectoral domains.
- Champion awareness raising of INSPIRE, ensuring that the sector is cognisant of the obligations and opportunities that this gives rise to.
- Promote good data management principles, including data curation and stewardship ensuring transparency and reuse where practicable.