

An investigation into the use of EuroGlobalMap in the UK academic SDI

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

EDINA

EDINA

- Part of the Data Library, University of Edinburgh, Scotland
- Designated a national datacentre in 1995
- EDINA's mission...
to enhance the productivity of research, learning and teaching in UK higher and further education
- Bibliographic and Geodata services
- Undertake R&D > service

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The UK academic SDI

- Policies and institutional agreements
- Data
- Technology and standards
- Ability to find geo-related resources
- Means of accessing data
- Tools to enable use of the data
- Infrastructural services
- Ability to publish data

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Timeline of EDINA study

Oct 2003	EDINA submits a proposal to ISCGM
Jan 2004	Ordnance Survey GB write a reference
Jan 2004	ISCGM meeting in Bangalore agrees to an EDINA "pilot study" with feedback at GSDI8
Mar 2005	EuroGlobalMap v1.1 Data arrives from EuroGeographics
Mar 2005	Pilot service launched
Apr 2005	Interim report at GSDI8
Sep 2005	Due to end and REPORT to ISCGM

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Objectives of the Pilot study

- A pilot study investigating the issues surrounding the use of GlobalMap in support of geospatial related research, learning and teaching in the UK
- Achieved using EuroGlobalMap by:
 - Building a file downloader client
 - Building a web map viewer client
 - **Plus** - conducting an interoperability study with 3 other UK academic institutions

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EDINA web client

The screenshot shows the EDINA web client interface. At the top, there are logos for EuroGlobalMap, eurogeographics, and EDINA. Below the logos, the text reads "EuroGlobalMap Trial Service" and "Copyright Notice". The notice states that access to the service is permitted only to registered users from Higher and Further Education Institutions (HFEIs) which subscribe to the Digmip service administered by the University of Edinburgh. It also mentions that use of EuroGlobalMap data is copyright and must be acknowledged with the following wherever maps and/or data are used "© EuroGeographics". Use of EuroGlobalMap data from EDINA is limited to evaluating the use of the data for Teaching, Educational and Academic Research. It is licensed for use up until the 30th September 2005. If data is downloaded it should be removed from institutional machines and any other media on or before the 30th September 2005. The notice further states that EuroGlobalMap data may not be used for commercial research purposes or for commercial gain either by the individual or his or her HFEI. Data stored by you on any network-accessible servers, or other computers to which non-Authorised Users may have access, must only be accessible to those who are registered and eligible to use it. Any unauthorised use will result in the withdrawal of the HFEI's right to access the EuroGlobalMap data. At the bottom, there are two buttons: "I agree to the conditions" (highlighted in green) and "I do not agree to the conditions" (highlighted in red). The footer of the page reads "© University of Edinburgh".

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Security issues

- Athens: current *de facto* standard for secure access management to web-based services within the UK academic sector
- The EuroGlobalMap data gets exactly the same level of protection as the Ordnance Survey GB data
- Important as provides a well understood and established environment for piloting services

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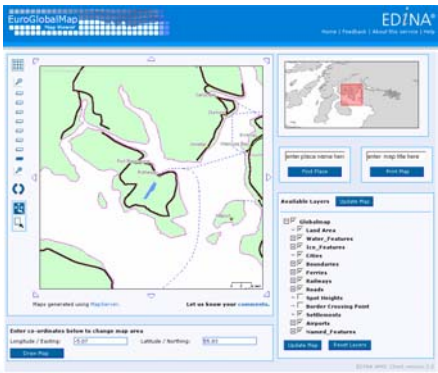
EDINA web client



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Web map viewer



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Web map viewer – Open Source

- Implemented using Open Geospatial Consortium (OGC) Web Map Service (WMS) interface
- Server side uses the open source Minnesota MapServer <http://mapserver.gis.umn.edu/>
- Client side by EDINA
- Gazetteer built using data from the GEOnet Names Server <http://earth-info.nga.mil/gns/html/bgn.html>

File downloader

Data by Country	Austria	Belgium	Croatia
Andorra (Shape)	Austria (Shape)	Belgium (Shape)	Croatia (Shape)
Cyprus (Shape)	Czech Republic (Shape)	Denmark (Shape)	Estonia (Shape)
Finland (Shape)	France (Shape)	Germany (Shape)	Greek Island (Shape)
Greece (Shape)	Hungary (Shape)	Scotland (Shape)	Ireland (Shape)
Italy (Shape)	Latvia (Shape)	Liechtenstein (Shape)	Lithuania (Shape)
Luxembourg (Shape)	Moldova (Shape)	Netherlands (Shape)	Northern Ireland (Shape)
Norway (Shape)	Poland (Shape)	Portugal (Shape)	Slovakia (Shape)
Slovenia (Shape)	Spain (Shape)	Sweden (Shape)	Switzerland (Shape)

- Full Datasets**
- The full datasets are provided in 3 formats:
- ESRI e00 - Each country is given a separate directory containing the layers for that country.
 - ESRI Shape (country separated) - Each country is given a separate directory containing the layers for that country.
 - ESRI Shape (country merged) - Each layer type is merged from all countries to form complete layers for the dataset. e.g. all rivers in Europe will be on the same layer.

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File downloader

ESRI e00 Files for Italy	Files
Theme	
Administrative Boundary	Download tar.gz file (273 KB)
	Download zip file (273 KB)
Hydrography	Download tar.gz file (747 KB)
	Download zip file (746 KB)
Transportation	Download tar.gz file (8 MB)
	Download zip file (8 MB)
Built-up Areas (settlements)	Download tar.gz file (122 KB)
	Download zip file (123 KB)
Elevation (elevation points)	Download tar.gz file (7 KB)
	Download zip file (7 KB)
Named Location (geographic of names)	Download tar.gz file (21 KB)
	Download zip file (21 KB)
All Themes	Download tar.gz file (65 MB)
	Download zip file (65 MB)

ESRI Shape Files for Italy	Files
Theme	
Administrative Boundary	Download tar.gz file (1 MB)
	Download zip file (1 MB)
Hydrography	Download tar.gz file (3 MB)
	Download zip file (3 MB)
Transportation	Download tar.gz file (8 MB)
	Download zip file (8 MB)
Built-up Areas (settlements)	Download tar.gz file (170 KB)
	Download zip file (170 KB)
Elevation (elevation points)	Download tar.gz file (10 KB)
	Download zip file (10 KB)
Named Location (geographic of names)	Download tar.gz file (14 KB)
	Download zip file (14 KB)
All Themes	Download tar.gz file (12 MB)
	Download zip file (12 MB)

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Phase 2 – Geography Markup Language (GML) download

- Objective – an additional tab on the client to allow http download of data for the user specified Area of Interest
- Alternatively, stream Geography Markup Language (GML) back to clients
- Using OGC Web Feature Server Service (WFS)
- Required a EuroGlobalMap GML Application Schema first



EuroGlobalMap GML Application Schema

- GML – Foundation for the Geo-Web, Lake, R et al.
- Created a Unified Modeling Language (UML) model of the EGM database
- Used this to create database schema in PostgreSQL <http://www.postgresql.org/>
- Used the UGAS (UML to GML Application Schema) tool to generate an EGM Application Schema <http://www.interactive-instruments.de/ugas>
- Result is a WFS generating EGM Application Schema compliant GML



JISC Interoperability Study

MIMAS

CCG
Center for Computational Geography

UNIVERSITY OF
JCL GEOMATIC

NERC
DataGrid

Objectives:

- prove the feasibility of delivering geospatial data using OGC standards;
- demonstrate ease of use and value added;
- build support and enthusiasm for further development;
- stimulate and advance further thinking
- identify major hurdles in full development.



JISC Interoperability Study - deliverables

- A range of OGC based web services (WMS;WFS;WCS)
- A basic annotation web service (XIMA)
- Use cases realised:
 - Datacentre. Access to data
 - Teaching (urban expansion)
 - Research (dynamic image registration using web services)
- A report on the utility and issues surrounding implementation of open standards for geospatial data within UK academic sector, including an assessment of security and access authorisation issues



JISC Interoperability Study



JISC Interoperability Study



JISC Interoperability Study

JISC Interoperability Study – preliminary conclusions

- More work required than possibly initially anticipated (though overheads with modern tools is less significant than was required previously e.g. MMS)
- Differences in underlying technologies may impact upon the degree of support for 'standards' (open source vs commercial)
- Security and DRM issues barely addressed – how do OGC 'web services' map into mainstream Web Services – what about WS-Security... longer term where does e-Research and GGF approaches to security fit in?
- Interoperability by definition assumes a minimum of 2 endpoints – providing the services themselves is only half the story! Still early days...

Engagement with users

- All usage logged – maps made and data downloaded
- Feedback form accessible from all pages
- Checkbox asking permission to email users
- Network of site representatives at subscribing universities
- Annual GeoForum
- EDINA exchange
- Training courses
- Stands at conferences, exhibitions, etc

The future

- Write up **report** for end September 2005.
- There is a demand for access to international data
- Web services will become more important
- Where next?
- Grid Services?

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Cyberinfrastructure