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

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http://edina.ac.uk/

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

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

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

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

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

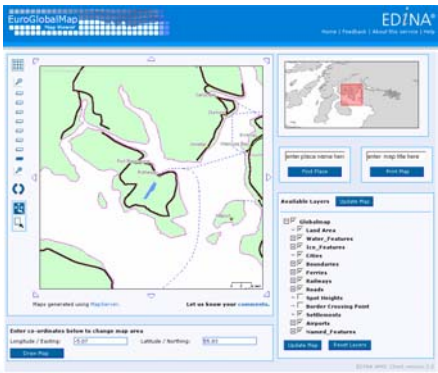• Important as provides a well understood and established environment for piloting services

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EDINA web client

Web map viewer

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

File downloader

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

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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

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JISC Interoperability Study

MIMAS

CCG
Center for Computational Geography

UCL GEOMATIC
DEPARTMENT OF
ENGINEERING

NERC
DataGrid
NDG

Objectives:
- prove the feasibility of delivering geo-spatial 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.

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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

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JISC Interoperability Study

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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