

GINIE: Geographic Information Network in Europe IST-2000-29493

Portfolio of Case Studies

D3.6.7

Editor: Chris Corbin Partner: EUROGI

27th January 2004

Project Co-ordinator University of Sheffield – USFD

Partners European Umbrella Organisation for Geographic information – EUROGI Joint Research Centre of the European Commission – JRC Open GIS Consortium (Europe) - OGCE

GINIE Geographic Information Case Studies

Contents

Section	Description	Page
1	Introduction	3
2	Iceland -Early Warning and Information System for Geologic Hazards in Iceland	4
3	Slovenia -An interactive Environmental Atlas -Slovenian Citizen Oriented Information Service	7 10
4	Spain - Coastal Management in Catalonia	13
5	United Kingdom - Seamless Citizen Service Delivery - Drawing the boundaries	16 20
6	Annex – Case Study template	23

GINIE Geographic Information Case Studies

Introduction

Geographic Information (GI) and the associated technologies are increasingly used throughout Europe to support a very wide range of activities within the European economy.

The GINIE case study portfolio brings together a number of easy to assimilate case studies on how GI and the associated technologies are delivering real benefits today.

The GINIE case study initiative is made up of a number of components:

- An online case study search engine, which enables case studies of interest to the viewer to be located.
- Case Study portfolios that bring together a small number of case studies from a range of European nations. These case studies can also be located using the case study engine.
- A loose leaf picture book

To assist the production of the case studies the GINIE project has provided authors with a template for guidance. (Refer to Annex A of this document)

The objective of each case study is to describe in non-technical language the real world requirement that GI and the associated technologies has been used to address, and the benefits that have accrued.

This document represents the fifth collation of six case studies from Iceland, Slovenia, Spain and the United Kingdom.

Chris Corbin Editor GINIE Project

January 2004

Early Warning and Information System for Geologic Hazards in Iceland

Matthew J. Roberts Physics Department Icelandic Meteorological Office <u>matthew@vedur.is</u>





Direct measurements of bedrock strain

Volcanic eruption at Mt Hekla, 2000

Real-time overview of geophysical data enables short- and long-term forecasts of hazard potential

Key words: Internet, earthquake, volcanic eruption, hazard identification, risk mitigation, Iceland

Project description

The Icelandic Meteorological Office (IMO) monitors and maintains an automated network of 43 digital seismic stations, which provides near real-time seismicity measurements for an area encompassing terrestrial and near-shore regions of Iceland (see http://www.vedur.is/ja). Additionally, digital data are received continuously from six borehole strain meters and 17 differential GPS stations. Collectively, these geophysical data allow unique insight into tectonic processes responsible for earthquake and volcanic activity in Iceland. To enable more precise, verifiable short- and long-term forecasts of geologic hazard potential in Iceland, the IMO is currently developing an early warning and information system (EWIS). Such forecasts will be achieved primarily through an Internet-based compilation of geophysical information, which will facilitate rapid visual analysis of historic and real-time geologic data. The main advantage of EWIS is the ease and speed at which multi-parameter historic and real-time geophysical data can be evaluated on-screen (Figure 1). Besides the ability to visualise processed field data, a resource database is accessible from the system interface. This database comprises digital information in the form of scientific publications, customised hazard summaries, pre-processed information for civil defence purposes, and annotated map and image resources.

Although the warning system will be used primarily by the IMO, it is anticipated that allied research institutions, civil defence personnel, and the public will benefit from Internet access to geophysical data and related hazard information. However, to ensure clear and effective information dissemination, varying access levels will be imposed. The warning system also serves as a platform for accessing environmental data from other institutions, and as an interface for public and scientific communication of observations. The IMO digital warning system is a state-of-the-art example of synergy between geophysical data and information technology for the purpose of geologic hazard mitigation.



Figure 1. EWIS view of earthquake epicentres (denoted by blue dots) in Iceland between 01 August and 01 November 2003. The rectangular zones on the map represent hazard zones defined by IMO for seismic monitoring.

GIS technology

Digital data received from IMO field sensors are stored in a dedicated geo-database, which allows fast and reliable data identification and retrieval from a thirteen-year continuous record of geophysical data. Coupled to the database is a GIS server, which generates user-defined data plots. Users interact with EWIS via a series of webpages. The synergy of GIS and other spatial software with the Internet domain means that geophysical data can be displayed remotely in many different graphical formats, thus allowing rapid dissemination of public and scientific information.

We now use ArcMAPTM GIS applications routinely to collate and transform spatial data into Internet maps. We use these maps for the foundation of the EWIS homepage (Figure 2), thus allowing geophysical data to be overlain dynamically. We are continually gaining access to new spatial data, so several themed maps are in concurrent development. Each map theme fits a specific purpose, ranging from the needs of the novice user to the IMO scientist. Future map versions will include demographic and infrastructure data for selected regions. These data are intended to assist hazard authorities with risk forecasting during geologic crises.



Figure 2. New composite base map for EWIS compiled using GIS techniques. Yellow shading represents the present-day zone of tectonic activity. Red and orange lines signify the location and extent of mapped bedrock faults and fractures exposed at the surface.

Geophysical coupling between seismic events

The exceptional data visualisation potential of EWIS means that temporal interactions between tectonic processes are becoming apparent. By combining time-dependent spatial and graphic data, distinctive, causative changes in tectonic activity are clear. The addition of geologic data to EWIS maps means that tectonic activity can be interpreted in a local context. We observe that comparatively large earthquakes on bedrock faults can transmit stress changes to several fault-lengths distance, thereby mechanically triggering secondary earthquakes. Using real-time GIS technology, we intend to create "event probability" maps for EWIS by dynamically calculating changes in bedrock stress that result from earthquake activity. These maps would serve to identify and quantify precursory active that could precipitate toward a tectonic crisis. In such circumstances, real-time GIS could also supply baseline data for civil defence purposes. Reaching the goal of clickable risk map will require additional development of numerical algorithms, but such achievements are at least in conceptual grasp.

Acknowledgements

For part funding of EWIS development work, IMO thanks the Icelandic Research Council (RANNÍS) and the Iceland Catastrophe Insurance Fund.

Contact Details

Dr Matthew J. Roberts Icelandic Meteorological Office Research Section, Physics Department Bústaðavegur 9, 150 Reykjavík Iceland

URL: <u>http://www.vedur.is</u> E-mail: <u>matthew@vedur.is</u>

An interactive Environmental Atlas Aleksander Zagar Director REALIS d.o.o. info@realis.si



Keywords: Environment, Public, Internet, Aarhus convention, Human rights, one-stop-shop

Description of application:

The application was developed in response to Slovenian policy on access to public sector information and the Aarhus convention. The application provides easy access to all data related with nature protection and the environment. The interactive environmental atlas is a free information service for the public and is accessible over the Internet. The basic principles of the information service are that it is flexible, safe and provides responsive information environment. The information service includes a user-friendly interface that enables environmental information of interest to be located and viewed. The Atlas provides answers on questions such as: What is located Where and Where is located What? The Atlas users can make graphical searches and undertake spatial analysis. The public are able to undertake queries over the World Wide Web and are able to submit comments and other data about the environment and risk assessment.

The Users that access the Atlas over the internet include mostly nature protection institutions and individuals, water management companies, hydro meteorologists, state and local governments, nongovernmental agencies, educational and research institutions and citizens.

In the past this information was not available in book form but was distributed across a wide range of maps and data in other forms both analogue and digital and located at different locations within the Slovenian Environmental Agency.

Benefits:

- Provides a one-stop-shop to online environmental information.
- Ease of use for monitoring environmental policy.
- The costs related to implementation and maintenance are low.
- Data sources are not distributed to the users side.
- A large amount of spatial data (70 GB) is maintained at one place.

- The Users do not need local applications and installations.
- Simply user interface also for beginners.
- High level of reliability and stability.
- High security standards.
- Easy monitoring for users needs.
- Simply integration with other systems and data warehouse.
- Easy accessibility.

Issue:

At the local and regional level geographic information systems are frequently used for environmental impact assessment and planning. Increasly they are also used for management of national and regional parks as well as for the monitoring of protected zones. Such examples are found at Slovenian Environment Agency home page, where the Slovenian Environmental Atlas is hosted.

Data Used:

- Topographical data
- Digital Orthophotos
- Corine Land Cover data
- Important ecological areas
- Nature protected areas
- Ecosystems
- Nature Valuable ness
- Hydrographical data
- Water protected area
- Spatial planning data
- Location of air monitoring stations
- Natural hazards areas for risk assessment

Relevant background information:

At the moment application is installed on an internet server at the Slovenian Environment Agency and it is running by Windows 2003 Server, IIS 6 and ewMap web mapping software. There are approximately 50 permanent users and another 50 occasional users inside the Agency.

Currently 35,000 members of the public have registered as users of the information service and 400 within the Slovenian environmental Agency.

Funding:

This project was funded from state authority sources. The Ministry of environment, spatial planning and energy of the Republic of Slovenia founded the Atlas.

The direct total costs were less then \notin 50,000 in the year 2001. Project was tendering was undertaken on behalf of the Ministry by a private company Realis Ltd. The value of yearly updating and operational costs are low, as employees of Environment Agency undertake this work.

Acknowledgements:

Practical solution is available at the Internet at address: http://kremen.arso.gov.si/nvatlas/ewmap.asp

Contact details

Aleksander Zagar Realis d.o.o Smartinska c. 130 SI-1000 Ljubljana

Tel: +386 1 5427 110 FAX: +386 1 5427 115 Email: <u>realis@realis.si</u> WWW: <u>www.realis.si</u>



Displaying the address locator facility



Displaying the locations of water monitoring stations

Slovenian Citizen Oriented Information Service

Igor Zore Director Academa d.o.o academa@academa.si



Keywords: Information Service, PSI Reuse, Internet

Description of application:

The main objective of the free information service across the Internet that provides an attractive, informative and useful source of information and in the process promotes demonstrates the power and role of spatial data within the information society. The basic principle in the design of the service was to "Keep the application as simple as possible". The information service has been named GEABIOS, which stands for Geo Enabled and Better Internet Oriented Services.

The stakeholders participating in GEABIOS come from a variety of businesses and institutions. GEABIOS integrates technology, data, maps and scenarios through a simple but clear and easy to use interface. Through offering a wide range of general interest data and useful services free of charge encourages repeat visits to the information service.

GEABIOS offers an ever-growing range of information and services which includes for example:

- Maps of Slovenia, Information about Slovenia, Fast Addresses, Cash dispensers, doctors, restaurants.
- Ability to easily search for: Addresses, finance, the fire brigade, educational establishments, public administration, post and telecom, law, research and development, health and service, trade, tourist trade and culture, sport and recreation.
- A wide range of information sources available such as Radio and TV on-line: 400 European radio stations, TV Slovenia and TV Croatia.
- On-line information about Space, Sky and the Earth, an Atomic Clock, Oceans and Seas, Stars, NASA-Solar System simulator.
- Easy GPS navigation and Tracking Online.
- Access to online weather forecasts including satellite and radar pictures.
- Free Games and services such as a Unit Converter.

Benefits:

- Provides a simple and easy access to information of general interest.
- Provides access to a wide range of public services.
- Information is provided in a wide range of displays, which include text, images, photographs, maps all of which are inter related.
- It is possible to locate information either from a graphical image or from text.
- Provides a one-stop window onto information about Slovenia and to other information sources available in the World Wide Web.

Issues

In Slovenia over the last several years' there has been a strong process of production of spatial data in digital form. This has resulted in a lot of data being available on-line and many institutions and individuals in Slovenia invested have invested their time to bring various data sets together and offer them to users for in a one-stop information service. The first objective is to improve awareness and understanding of what data are available for current and future use.

Data Used:

The information service contains data of two main types:

- Raster maps, starting from scale 1:5000 to the scale 1:2.500.000. The software enables smooth zooming and panning through all the scales.
- Geocoded data are represented by entities, which behave as points, lines, polylines or areas. 2D and 3D. All information contained in the information service is geocoded. e.g. displayed on map.

Maps and geocoded data were obtained from the following companies and institutions:

- Ministry of Environment Surveying and Mapping Authority of the Republic of Slovenia,
- Geodetic Institute of Republic of Slovenia,
- SAZU Slovenian Academy of Science and Art,
- Geological Institute of Republic of Slovenia,
- Statistical Office of Republic of Slovenia,
- Academa Ltd,
- Globalvision, Spatial Information Systems Ltd.

Relevant background information:

The applications consist of server and client components. GEABIOS is able to connect to any server, any database, anywhere via Multiplexed Pipelined TCP/IP protocol.

Funding:

A private sector company Academa Ltd in cooperation with a research company Globalvision, Spatial Information Systems Ltd, and Science Society funded the project. GEABIOS was founded from other projects dealing by companies as payable-services.

Acknowledgements:

Practical results partly in English language are available at the following URL: <u>http://www.geabios.com/indexGB.htm</u>

Contact Details

Igor Zore Director Academa d.o.o Zemljemerska ulica 12 1000 Ljubljana Slovenia

Tel: +386 1 439 40 20 Fax: +386 1 439 40 20 Email: <u>academa@academa.si</u> WWW: <u>www.academa.si</u>

Case Study





Coastal Management in Catalonia

Jordi Guimet Director IDEC (Spatial Data Infrastructure of Catalonia) JGuimet@icc.es



Keywords: Coastal management, forest management, municipalities, nitrates, Internet

Description of the Application

The Geoinformation coastal zone application was developed as part of the European Commission Environment Directorate's Eurosion project (<u>http://www.eurosion.org</u>). The purpose of the application is to provide access to information about the Catalonian coast for the purposes of evaluating and implementing policy and management measures to address coastal erosion. The application is part of a Local Information Service. The Geoinformation viewer enables the display of information and provides tools to Zoom In, Zoom Out, Zoom Window, Obtain Information, Print, Help. The application allows the viewer to make standard queries such as: a search for geographical names, zones or municipalities. These tools and queries have been designed to facilitate ease of use.

The combined utilization, on line, of these information sources enables a better study and analysis of the coast of Catalonia to be undertaken. This enables the observation of the nitrate vulnerable zones together with the public management of forests within the protected zones in the coastal municipalities.

Benefits

- Provides an inventory of existing information related to the Coastal Environment.
- Improve the access to this information.
- Makes the information available to the Public.
- Avoid duplication and improve the efficiency of the creation and maintenance of information.
- Bring the various stakeholders involved in managing the coast together through a one-stop geoinformation portal.
- Promotes Integrated Coastal Zone Management (ICZM).

Data Used

- Colour Orthophotos of Catalonia at 1:5000.
- Orthophoto 1:5000 (black and white) and 25000 (IRC and colour) of Catalonia
- cartography: Soil uses, PEIN, Special Protection Natural Spaces, Nitrate Vulnerable Zones, Public Management Forests, Waste Managers, Rivers, Reservoirs
- 1:5000 topographic cartography of Catalonia
- Administrative boundaries of the Municipalities, counties limits and geographical names of Catalonia.
- Information that shows the area of action of the coastal management projects.

Map server:



Data catalog:



Background Information

The IDEC has been one of the institutions that have collaborated in this project, which is based upon the Catalonian spatial data infrastructure. (SDI). The Autonomous University of Barcelona – ICTA (email: <u>gr.eurosion@uab.es</u>) co-ordinated the Eurosion project. The data is physically held on different web map servers with different architectures and formats. This WMS client is based on the concept of interoperability¹ between servers. And it has been designed following the specifications WMS (Web Map Service) and WFS (Web Feature Service) of OGC. The use of these specifications allows this overlap on-line of different cartographic layers located physically in different map servers

¹ The ability of two or more systems to interchange information and to be able to use it.

The objectives of the European Commission funded Eurosion project is:

- To provide recommendations on policy and management measures to address coastal erosion in the EU.
- Assess and map the sensitivity of the European coastline to coastal erosion (based on a GIS database compatible with scale 1:100000).
- Review physical and technical engineering lessons learnt from current coastline management practices.
- In depth study on local policy cycle and relevance of local information exchange.

Funding

The project was funded by the European Commission Eurosion project. The cost assigned to the technical development of the Local Information System in the pilot site of Barcelona has been around 10.000 \in . Other costs are derived from Metadata generation, marketing and diffusion, coordination, etc.

Contact Details:

Jordi Guimet PROJECTE IDEC Parc de Montjuic 08038 Barcelona Spain

Tel: +34 93 567 15 00 Fax: +34 93 567 15 67 Email: JGuimet@icc.es WWW: http://www.geoportal-idec.net/ http://www.geoportal-idec.net/idecostes

Seamless Citizen Service Delivery Tony Black Intelligent Addressing ablack@intelligent-addressing.co.uk

Keywords: Local government, knowledge, address, gazetteer (street, land and property), property, data linking, Unique Property Reference Number (UPRN), geo-coding

Master address: 1 Poultry, London EC2 (as photograph) _____

Alternative addresses for the photograph: 1 Poultry, London EC2R 8EJ 12 Pancras Lane, London 3 Poultry, London 6 Poultry, London EC2R 8EJ 7-8 Poultry, London 30 Queen Victoria St, London 32 Queen Victoria St, London EC4N 4SS 36 - 38 Queen Victoria St, London EC4N 4SS Villa Augusta, Bucklersbury, London EC4N 8BD



The Issue

Local government is responsible for the delivery of a very wide range of services to the local community. These services, that are the responsibility of over 400 individual local authorities in Great Britain, include those related to the democratic process and taxation, as well as those related to the direct needs of the community, such as refuse collection, street lighting, social services, schools, planning and building regulations. All of these services have a common element, which is the land and property - an address; to where these services are either delivered to or serviced from. The organisational structure of each local authority is made up of a number of autonomous units, each of which over time have built up master lists of land and property to where they deliver the services they are responsible for. This organisational structure is not transparent to the beneficiary of the services.

Description of Solution

In order to address the issue of providing cost effective sustainable joined up services, a public private partnership was established in 1999 to create a master list of all land and property objects. The local lists could be used in the first instant by all departments of each local authority and the national compilation by all local authorities throughout England and Wales. The master list, the National Land and Property Gazetteer (NLPG), was created from the many hundreds of local land and property lists (LLPGs) to create the single master list. The NLPG has been matched with other similar application lists compiled by other organisations such as the Royal Mail, Land Registry for example. Each local authority is responsible as the local custodian for developing a local master list, including data matching and cleansing, which eventually forms part of the national master list. The construction of the master list, together with the management of the process, are handled by a private company. As other organisations match their data to the master list the richness of the list is enhanced.

Benefits

- Delivering citizen centred services with confidence.
- Enables seamless services.
- Releases resources (for example: personnel, ITC, office space) from the back office to the front office for delivering services.
- Utilisation of data from source and as a result reduces the use of secondary data sources.

- Enables different (multiple) views of the same real world object either by the citizen or the organisation responsible for providing their services. i.e. Flat 1 = Flat 0.1 = Ground Floor Flat.
- Provides unique identifiers (keys) for use in linking other data sets, both within an organisation and between organisations.
- Provides a consistent knowledge base for all organisations linked into the master list of addresses and properties.
- Each entry in the master list is geocoded, which enables spatial analysis and presentation.

Data Sets

The following data sets have been used in compiling the master list of land and property:

Local:

- Electoral register;
- Council tax;
- Non domestic rates;
- Street Gazetteer;
- Local authority gazetteers;
- Other application data lists e.g. refuse collection, planning, housing;

National:

- lists of residential and commercial properties from the Valuation Office agency;
- lists of registered property from the HM Land Registry;
- linked to post code data from the Royal Mail;
- linked to geo-codes from the Ordnance Survey.

Current status

The master list is currently in use by local government across England and Wales and contains over 31 million records. The list is also linked and used by the HM Land Registry, the Valuation Office Agency, the Stamps Office (part of Inland Revenue). Within individual local authority areas the local master list is also used by partner organisations involved in the delivery of citizen centred services.

Funding

There is no direct funding from central government. Local Authorities fund the development of their local lists either from their budgets or out of a general e-Government fund.

Contact details

Tony Black Operations Director Intelligent Addressing Ltd Ivybridge House 1 Adam Street London WC2N 6DD

Telephone: +44 (0) 20 7747 3500 FAX: +44 (0) 20 7747 3501 Email: <u>ablack@intelligent-addressing.co.uk</u> Web: <u>www.nlpg.org.uk</u>

The following small example shows how using the NLPG (the Master List) for England and Wales, a wide range of information can be retrieved from a number of sources. DIAGRAM 1 shows that 'Eagle Street' in the town of 'Belper' has been entered as the item of interest for the search of the Master List. As a result of the search a list of addresses for 'Eagle Street' has been displayed. Selecting '2 Eagle Street' opens another window that provides information held about that address. This shows that '2 Eagle Street' is located within Amber Valley District Council and that they hold information about that property. Selecting this link (in red) opens another window that displays the information on the Amber Valley District Council web site, as shown in DIAGRAM 2. This link from the Master List (the NLPG search web site) to the local authority site and directly to the specific information about '2 Eagle Street', is achieved by transferring only the Unique Property Reference Number (UPRN), identified in the Master List, to Amber Valley District Council's system. The information held about '2 Eagle Street', as shown in DIAGRAM 2, contains a range of further information sources, one of which is the elected Councillors for that area. Selecting 'Councillor Ghent' opens up another window as shown in DIGARAM 3, which provides information about Councillor Ghent. This example illustrates how the Master List is currently being used to support the democratic process.

File Edit View Favorites Tools Help	
🔇 Back 🔹 💿 - 🖹 🗟 🏠 🔎 Search 🤺 Favorites 🜒 Media 🪱	🗟 • 🎍 🗷 • 🕞 🦓
Address http://www.	Go Links ×
home logout The National A Property Gazetteer	user, Tony Black, Intelligent Addressing Ltd. logged in: 17th Dec 2003 03:12 PM
search criteria	search results
Location Postcode Authonty OSRN Location BELPER Street EAGLE STREET Building Name Street No Range From To Search Clear Please enter a Location (may be the name of a hamlet, village, locality, town, city or county). A partial entry plus the Return or Enter key will bring up a pick list. Once a Location is selected, you must either. Select a street and if required refine the search using building name, street number or street number range. Enter a partial or complete building name.	19 Jackstes kulle. Uspanning page 1 of r. 1 100030015210 1 EAGLE STREET, HEAGE, BELPER, DERBYSHIRE, DE56 2AJ 100030015208 10 EAGLE STREET, HEAGE, BELPER, DERBYSHIRE, DE56 2AJ 100030015211 2 EAGLE STREET, HEAGE, BELPER, DERBYSHIRE, DE56 2AJ 100030015211 2 EAGLE STREET, HEAGE, BELPER, DERBYSHIRE, DE56 2AJ 100030015211 2 EAGLE STREET, HEAGE, BELPER, DERBYSHIRE, DE56 2AJ 100030015211 2 EAGLE STREET, HEAGE, BELPER, DERBYSHIRE, DE56 2AJ 100030015211 2 EAGLE STREET, HEAGE, BELPER, DERBYSHIRE, DE56 2AJ 100030015211 2 EAGLE STREET, HEAGE, BELPER, DERBYSHIRE, DE56 2AJ 100030015211 2 EAGLE STREET, HEAGE, BELPER, DERBYSHIRE, DE56 2AJ 100030015211 2 EAGLE STREET, HEAGE, BELPER, DERBYSHIRE, DE56 2AJ 100030015211 2 EAGLE STREET, HEAGE, BELPER, DERBYSHIRE, DE56 2AJ 100030015211 2 EAGLE STREET, HEAGE, BELPER, DERBYSHIRE, DE56 2AJ 100030015211 2 EAGLE STREET, HEAGE, BELPER, DERBYSHIRE, DE56 2AJ 100030015211 2 EAGLE STREET, HEAGE, BELPER, DERBYSHIRE, DE56 2AJ 100030015211 2 EAGLE STREET, HEAGE, BELPER, DERBYSHIRE, DE56 2AJ 100030015211 2 EAGLE STREET, HEAGE, BELPER, DERBYSHIRE, DE56 2AJ 100030015211 2 EAGLE STREET, HEAGE, BELPER, DES6 2AJ 100030015211 2 EAGLE STREET, BELPER, DES6 2AJ 100030015211 2 EAGLE STREET, BELPER, DES6 2AJ
Once selection is complete, click on Search.	SAON PAON 2 Postcode DE56 2AJ USRN 600500 Status Approved
Start Start Start Akrosoft Outlook 🔹 🗐 NLPG images 12.03	I Land and Pr 🗿 My Property - Micros 🗿 NLPG Property Detail

DIAGRAM 1



DIAGRAM 2

DIAGRAM 3



Drawing the Boundaries

Ian Bush, Technical Director, Black & Veatch Consulting Ltd bushi@bv.com



Keywords: Policy, Recreation, Right of Access, Countryside, England, Public Consultation, Internet.

Description of Application

The Countryside and Rights of Way Act 2000, sometimes called the '*Right to Roam*' placed a duty on the Countryside Agency to prepare maps of all open country (mountain, moor, heath or down) and registered common land in England. When completed, this project will provide an accurate map showing open country and registered common land in England where the public will have a new right of access on foot for recreational purposes.

The project has three phases. The first is the mapping phase that culminates in the production and issue of the **Draft Map**. This is followed by a 3-month consultation period during which the public is invited to submit comments on the map. All comments received are carefully analysed and any amendments are made via the publication of the **Provisional Map**. Following the issue of the Provisional Map, anyone with a legal interest in the land has 3 months to submit an appeal to the Secretary of State against the inclusion of their land on the map. When all appeals have been heard the results are shown on the **Conclusive Map**.

The project involves managing a complex process of mapping and public consultation, staggered across eight regions covering the whole of England. The solution places a geographic information system (GIS) at the heart of the project.

Benefits

- Comprehensive Information on public access rights to the countryside.
- Engagement with stakeholders, including a statutory public consultation (e-enabled).
- Digital audit trail of all decisions making the process traceable and transparent.
- Resultant mapping can be generated dynamically and viewed over the Internet.

Issues

The approach to the mapping open country has been based on exploiting the inherent 'intelligence' and accuracy of the Ordnance Survey of Great Britain's MasterMap data and the project is the first use of this groundbreaking product on a national scale. By using MasterMap the project team did not need to draw (digitise) new lines and boundaries but could select those areas (polygons) that made up a parcel of open country. This approach turned the project from a data capture exercise to a data selection and categorisation exercise and meant that the mapper's were free to focus on the value-adding business of identifying open country through analysing and interpreting nearly 400 different datasets.

Whilst the mapping itself was a huge technical task, the consultation stage is possibly more challenging as it needs to consider the aspirations of multiple stakeholders. For this reason a mapping process that is transparent and consistent was agreed. An integrated GIS to support this process from end-to-end keeping a detailed audit trail of all decisions made on every parcel of land was then developed. The system currently holds around 3 million records.

Determination			_ 🗆 🗙			
Current Collection	Decision	Open Country Type-				
New Collection 🔛 🛃 📭 Decision Detail >>	Open Country 🔽	C Mountain	Moorland			
	No Useful Purpose 🗖					
Determination Navigator	Flag for Review 🗖	C Downland	C Heath			
Ma New Collection: Mapper - DAMITS						
No. No. And No.	Datasets Used					
	Laver Name	Format Index <50%	50-75 >75%			
			с с г			
	Phase T Habitat Survey - East Sussex					
User dts Date 29/4/2002	Countryside Survey 1990					
	Monitoring Landscape Change		• • -			
Comments Definitely Open Country						
Editing Agree with previous user						
Determination Geography Manager						
Included TOIDS Added TOIDS						
1000001779021030						
Removed TOIDS						
->						
	Clear	Datasets	More Datasets			

To facilitate the public consultation process, a website that dynamically creates maps from userprovided location information such as postcodes (<u>www.ca-mapping.co.uk</u>). The website allows the public to query the maps, submit comments on-line or print off their map and post it to us along with a comment form. The website was created in 8 different languages and in compliance with the International Web Accessibility Initiative (WAI) guidelines from the World Wide Web Consortium (W3C). Special attention was given when developing the web site to ensure people that maybe colourblind are not excluded.

Data Used

Nearly 400 different datasets have been registered on the system amounting to almost 650Gb of both vector and raster data. Some of the most important and more common are listed below:

- Ordnance Survey MasterMap for the whole of England (1:1250 & 1:2500 scale topologically correct "intelligent" vector data)
- Aerial photography for the whole of England (1:10,000 scale less than 2 years old)
- Phase 1 Habitat Maps
- Environmentally Sensitive Area Maps
- Moorland Line Map
- National Inventory of Woodland Maps
- Landscape Characteristic Change Maps



Relevant background information

Draft Maps for all eight mapping areas that cover England have been issued. The consultation period for six of these eight mapping areas has now closed and we have published the Provisional Map for four areas. No conclusive maps have yet been issued but it is anticipated that all Conclusive Maps will be published before the end of 2005.

As part of the consultation process we issued 45,000 individual paper maps. These were deposited with 414 local authorities, 163 individual libraries, and a total of almost 11,000 statutory consultees, including over 10,000 parish councils. We organised 118 individual road show events, which attracted over 10,000 visitors to come and talk about the maps. The public consultation process resulted in almost 20,000 comments on the Draft Map in areas 1-6; figures for areas 7 & 8 are not available as the draft maps are still open to public consultation or have recently closed.

This is the first statutory, national consultation exercise carried out on the Internet. In the two years since its launch in November 2001, the site has received nearly 22 million hits from 362,000 visitors, and has generated nearly 1.75 million unique maps.

Funding

The Mapping Access land in England Project is let and managed by the Wider Welcome Division of the Countryside Agency, a UK Government agency that comes under the Department for Environment, Food and Rural Affairs (DEFRA). The value of project is Euro 21.42 (£15 million).

Contact Details

Ian Bush Grosvenor House 69 London Road Redhill Surrey RH1 1LQ

Tel: +44 (0) 1737 856268 Fax: +44 (0) 1737 772767 Email: bushi@bv.com

Annex 1

The GINIE case study template

[Title: punchy, not more than 8 words] [Author/organisation]

Keywords – please provide up to five keywords related to the case study.
 Photograph + acknowledgements (it is mandatory to supply a photograph)
 Note: Please ensure the colour photograph or (35 mm slide, or negative/positive) is of a quality that is readable when reduced to a size 5.2 cms by 8.2 cms to fit the page and when printed. The photograph should clearly indicate to the lay reader the application area to which the case study appertains.

Description of Application

Describe in not more than 300 words the real world application using language that will be readily understood by the lay reader. Use subtitles to break it up. Is the application mandatory as a result of government legislation? (**Note**: This section of the case study is mandatory.

Benefits

List up to a maximum of four benefits (as bullet points) in order of greatest benefit first. i.e. list in descending order. The benefits to be those to the Country (Society) rather than to the efficiency of the organisation. **Note**: This section of the case study is mandatory.

Issues

List the issues resolved and/or outstanding which need to be addressed related to this case study. For the outstanding issues whom should take action to resolve them and why. **Note**: This section of the case study is mandatory.

Data Used

List the data sets used (as bullet points) and provide an indication whether the data set is internal or external to the organisation. List the datasets that provided the key benefits first. Use terms that will be understood by the lay reader. Note: This section of the case study is optional.

Relevant background information

Briefly describe using language that will be readily understood by the lay reader any relevant background information which would assist in the understanding of this case study. e.g. does the application conform to any GI standards? Is the application in constant use, periodic use or used for a one off event such as managing a major public event? How many people use the application? (directly as users and indirectly as recipients of the information produced by the application). **Note**: This section of the case study is optional.

Funding

Briefly outline how the application was funded. e.g. did the application receive any funding from government or European or other sources? Is the application funded by the use of the application. i.e. by provision of a service? Was it funded internally within the organisation. Provide an indication if known of the expected pay back period. **Note**: This section of the case study is mandatory

Acknowledgements

List any relevant acknowledgements, references (such as relevant legislation, or World Wide Web URL where the application is accessible). Please indicate whether this case study has been published before if so where and when. **Note**: This section of the case study is optional.