



Digimap: Mapping via the World Wide Web

by Peter Burnhill, Director of EDINA and Co-Director of the Digimap Project

Stop Press

In March, the JISC and Ordnance Survey agreed that EDINA should transform the Digimap eLib Project into a national online mapping service for staff and students throughout UK higher education. EDINA and MIDAS will collaborate to provide user support.

DIGIMAP IS A system that provides Internet access to Ordnance Survey mapping and digital map data. The 'demonstrator' version of Digimap, which was developed at the Data Library as part of the JISC eLib Programme, is in its second trial year at the Universities of Reading, Oxford, Newcastle, Glasgow, Edinburgh and Aberdeen. The librarians and other support staff at those universities have done much to make the project a success.

The Digimap Project included a number of accompanying evaluation studies that monitored the experiences of 400 users during the first full academic session, 1997/8. These record the wide variety of purposes to which maps of Great Britain are put in academic research and teaching: perhaps the most surprising fact to emerge is that over 80% of the users in 1997/8 were not geographers. The principal use by staff and students has been to generate maps to view on screen or to send to the user's local printer, although about 20% of the use has been to download digital map data into desktop geographical information systems.

How it works

We have recently started testing a very simple client interface that allows access to digital mapping via standard web browsers, in line with our policy of maximising accessibility. Our trial sites

report that this version requires little support and we anticipate that it should pass the 80:20 rule – up to 80% of tasks can be done using the standard interface.

"It's perfect for students who just want an A4 map to put in their project or assignment. It's so easy to print from it that they find it wonderful (and I must say I agree with them)."

Linda Kelly, Newcastle University Library

We intend to use Java applets to have greater functionality, and data, delivered to the client desktop. We began the trials using a Java applet, which was innovative at the time and certainly ensured the feasibility of the project: in all, there were some 35,000 maps delivered over the Internet using the Java applet. It was, however, demanding of the client workstation and was not suitable for the novice user.

Past, Present and Future

The origins of the Digimap Project lie in initial discussions in 1992 at the British Cartographic Society (BCS) Map Curators' Group, on the problems and opportunities facing university map libraries, as Ordnance Survey large-scale maps became regarded as expensive or were available as digital map data only. We presented follow-up papers in 1994 and 1996. In 1994 we reported on a feasibility study and proposed a solution based on the online data library model, comparable to that offered by the UKBORDERS service. By 1996 we had embarked on the Digimap Project and were able to place the problem within the wider 'post-Follett' context of the challenges and opportunities posed by the electronic library, and the demand for direct access by end-users to networked electronic resources.

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In parallel, the JISC and the Ordnance Survey had begun another round of negotiations for UK-wide academic access to the Ordnance Survey digital map data. The results from our evaluation studies, and our experience in handling the Ordnance Survey map data, helped give a focus to those negotiations. In November 1998, the JISC put out Circular 12/98 (http://www.jisc.ac.uk/pub98/c12_98.html), the response to which indicated sufficient support for a national agreement and progress to the next stage – planning for a national online service over the next five years.

We can now report that the JISC has accepted our proposal, recommended by the Committee on Electronic Information (CEI), to transform the Digimap 'demonstrator' into a system capable of sustaining a national service. The proposal calls for the launch of an online service early in 2000. The online service for staff and students in all subscribing HEIs will be preceded by a set-up period in 1999. This will be used for preparation by those providing the national service and for a programme of training and awareness for support staff in the universities which have indicated that they wish to subscribe. We also hope to provide some services to field-testers and specialist users of digital map data during 1999.

If you would like to find out more about the Digimap Project, or discover the latest news about the forthcoming national service, please have a look at <http://digimap.ed.ac.uk/>

All's Well that Ends Well – the Compendex Story

by Terry Bucknell, Faculty Team Librarian, University of Leeds

WHEN THIS UNSUSPECTING engineering librarian saw the message posted to lis-scitech on 28th August 1998 announcing that BIDS had not been chosen by the JISC to continue to host Ei Compendex, his heart sank. As other messages were posted to the list, it became clear that I wasn't alone. Ei Compendex is the most comprehensive interdisciplinary engineering information database in the world. The prospect of inducting hundreds of new engineering students in September/October and then retraining them in December filled me with dread. Then there were the lecturers who told their students to 'search BIDS' as if it were a single database. Hastily I had to cancel our order for BIDS Ei Compendex user guides and amend our training materials to include the rejoinder, 'and once you've mastered the interface, it will change'.

As D-Day, 6th December, approached it became clear that negotiations between CHEST and Ei were protracted, and had delayed the release of the EDINA service until 7 January 1999. It came as quite a relief when it was announced that Ei Compendex would continue at BIDS – at first until the end of December and then until 30th June 1999. The shift to 7 January left us plenty of time to decide how and when to effect the switch-over. The news that EDINA would accept logins from ATHENS shared access accounts until the end of June was good news too, although our users appear to have experienced little difficulty in setting up personal ATHENS accounts for other EDINA databases. We were already considering bulk uploading for the next academic year, so it was always likely that our users would have another new username and password for CHEST databases for 1999/2000.

Initially, I wasn't too impressed with 'New Ei Compendex' (much like New Labour...) but an e-mail to the EDINA helpdesk revealed that most of the concerns I had were already being addressed by EDINA. In fact, I thought that the reply was so useful that I asked the EDINA helpdesk to forward it to lis-scitech. Some improvements have already gone live: records are now presented most recent first, and there is now an on-screen tally of marked records.

Here at Leeds we have directed users to BIDS Ei Compendex for the time being. We will promote the EDINA implementation with the next release at Easter when single-step marking of records and user profiling should be available. The EDINA Ei Compendex posters and flyers are certainly eye-catching, and we are confident that pointing our readers to the choice of services between April and August will result in a smooth switch-over: final-year students will be able to stick with BIDS; everyone else will have months to get used to the new interface.

As Leeds also subscribes to EDINA's INSPEC service, the prospect of future cross-searching between Ei Compendex and INSPEC is of real interest to us. In a few months, EDINA has turned from 'that datahost that I don't need to bother about', to the single most important online information source for engineers. The hype of the DNER for Engineering is rapidly becoming reality.

Back to the Future with INSPEC

by Roddy McLeod, Senior Faculty Librarian, Heriot-Watt University

UNTIL THE early 1990s, we allocated a very reasonable budget for mediated online searching at Heriot-Watt University Library, and we were able to offer searches at no cost to our users. As might be expected, the service was well-used, and each year we would make several hundred searches. One of the most popular databases was INSPEC. Even though we subscribed to the printed Science Abstracts A, B and C, the allure of relatively easy searching through several million references was too strong for most of our researchers to resist, and the only disadvantage was the call on the time of the subject librarians, who had to make all the searches and then audit the resulting invoices from online hosts.

Along with many other institutions, financial cutbacks eventually meant that our online budget all but disappeared, and we were forced to recover the cost of most searches directly from readers. In practice, this meant that those with access to sizable research grants could afford to run searches, including some academic staff and a small number of fortunate postgraduates, but others suffered, in particular undergraduates. Even though we took advantage of educational discounts offered by some of the commercial hosts, the number of searches reduced considerably. Some side effects of the reduction were that the subject librarians increasingly became 'stale', finding it hard to keep up to date with advances in online search techniques, and little promotion of the service was undertaken as it was seen to be like dangling a carrot in front of people who couldn't afford the direct costs. However, a number of online alerts (saved searches) continued to be run, with in some cases the results being sent directly to the researchers by email, and in fact this amounted to our main use of the database.

During this period we considered purchasing INSPEC Ondisc, the CD-ROM version of the database, but our lack of a campus CD network made this a less than perfect option. Then, finally, CHEST negotiated a dataset agreement for INSPEC through five different authorised service providers. We chose EDINA as supplier for a number of reasons, not least because of the Ovid interface, and potential synergy and cross-searching in the future with EDINA Ei Compendex+. Now the database is available to all members of Heriot-Watt University at no direct cost to the user, and once again we look forward to renewed and substantial usage of the database. Networked access to INSPEC brings us new challenges in that it is another database to promote, and although the subject librarians will no longer need to undertake searches themselves, they will find themselves well placed to introduce it to staff and students. Networked access to INSPEC has a price, of course, but one of the first things we will do is transfer all current online alerts in the database to saved searches on EDINA INSPEC, thus saving nearly £2,000 per annum of our researchers' hard-earned funds.

EDINA and the DNER

by Lorcan Dempsey, UK Office for Library and Information Networking, University of Bath

THE JISC PROVIDES a range of information services for the UK higher education community, which are the basis of a highly valued national electronic resource. In its Collections Policy, the JISC has now outlined how this resource will be taken forward, and has turned its attention to the next phase of development, the creation of the Distributed National Electronic Resource. This is an idea which is currently being elaborated. In what follows I offer a *personal* view of some possible DNER directions.

It is interesting to compare the current web environment with the types of services that might emerge through the DNER. A large part of what makes the web so seductive is that a user can discover, locate, request, and have delivered documents using simple, integrated, point and click actions. Indeed, the web provides simple 'content infrastructure', which supports use and exchange of information content. It may not be an ideal information environment, but it is accustoming our users to easy access.

Consider, in contrast, access to the journal literature. A potential reader has to discover relevant articles, locate them, request them from some source, and have them delivered. There are two areas where integration is lacking. The first is *within* an operation, where one may have to interact with different systems to complete the operation, or where systems support the operation in different ways. For example, to discover items, one interacts individually with bibliographic databases on CD-ROM, at the datacentres, and elsewhere. When it comes to locating where a desired item is, one may have to check a catalogue, a union list, or some other resource; and so on. The second is *between* operations, where links are lacking to support 'process automation'. An example of process automation might be where data is passed between a search service, a document delivery service and an accounting system, without the need for repeated manual intervention. Neither of these forms of integration is well supported, creating a barrier to use. The existing model of service is of standalone network services, integrated by user effort. There is limited 'content infrastructure' – which would support point and click working across various services, or linking services to automate processes. Services do exist which provide some form of aggregation, but none provides the full range of what a user might require. This example of inadequate integration focuses on the journal literature; readers will be able to supply examples from their own experience. The current 'clunkiness' of use is a feature of the immaturity of our information environments: after all, they are largely still 'under construction'.

This is not a sustainable approach to the provision and use of rich learning and research materials. For this reason the JISC is promoting the provision of an additional layer of service which weaves these resources into a fabric of integrated use. We might call such higher level services 'brokers'. A broker provides consistent access to other services. Some examples within the higher education area are the Arts and Humanities Data Service Gateway, and the cross-searching facility provided by ROADS for subject gateways. The gain with such federating approaches is that a library, or learning environment, can plug this higher level service into their offerings, saving their users time and effort. Of course users may continue to interact with individual services as and when

they wish, subject to whatever privileges they have.

I have discussed issues arising from access to the journal literature, partly because of EDINA's potential role in this area, but there are other examples of how services might be woven into a wider fabric of use. For example, EDINA is discussing the integration of different types of resource in the engineering area with the Edinburgh Engineering Virtual Library (EEVL). This is an example of subject level integration. EDINA's involvement in geospatial data suggests other potential integrative directions.

So what types of things would it be useful to do? Two areas come to mind:

Description. The collections and services which comprise the DNER need to be described, so that potential users can discover and use them, and so that libraries, subject gateways, or others can advertise the services they provide. Descriptions should be readable by human users, and by machines acting on their behalf. Several things need to be described. There is the 'content' of a resource to facilitate discovery, selection, and use. There is how it is provided as a network service: the location of that service, the access protocol, the request format (which may be defined by a query language), and the schema(s) relevant to the service (e.g. the metadata format in use). Finally, the terms and conditions of use may also need to be described. Initially, such descriptions may be provided in a database (UKOLN has been experimenting with such an approach: see <http://www.ukoln.ac.uk/metadata/roads> for details). Gradually a more distributed framework might emerge, making use of directory services and registries.

Federation. An additional service layer of brokerage activity needs to be provided, concerned with management of service integration. It would be useful to identify usage scenarios which will motivate the construction of the DNER, such as geospatial or scientific domains, as well as a service which supported use of the 'DNER journal collection'. The DNER contains discovery (abstracting and indexing) services: it would be useful to be able to search across these in different combinations. An article may be available from numerous locations: library collections, the British Library Document Supply Centre (BLDSC), JISC-supported digital collections, and so on. Significant content infrastructure would be required to match records against this variety of resources to produce locations, but such work would be beneficial.

Broker services might also have a subject focus. A subject hub which federated different collection types (internet resource descriptions, data sets, journal articles, mailing lists) would be interesting. EDINA and EEVL are moving towards this type of arrangement.

Such developments depend on providers making their network services available through agreed service profiles which facilitate interworking. Although the ambition in the long term will be to develop brokers in such a way that they provide a plug and play infrastructure, it is likely that initial broker services will require quite a bit of customisation or bespoke development, given the lag between standards developments and requirements, and the immaturity of the current infrastructure. Where possible, service providers should conform to agreed service profiles to ensure maximum participation in the DNER. A set of profiles which cover common resource types could be defined, and conformance to them would influence the selection of resources and suppliers. Some JISC funded broker services would be a useful way forward. EDINA, for example, has invested significant effort in developing 'content infrastructure' which might be built on to offer brokerage across sets of services, some of which it hosts, some elsewhere.

A fuller version of this article appears in the html version of this edition of *Newsline*: <http://edina.ed.ac.uk/newsline/newsline4-1.html>

Geographic Information and non-Geographers

by Dr Donald J. Morse, Data Library, Edinburgh University Computing Services

THE TERM 'geographic information', or GI, refers to digital information or data that is spatially referenced and is produced for use in computerised systems known as Geographical Information Systems (GIS). One form of output from a GIS may be Ordnance Survey maps, of varying scales. Another can be thematic maps showing, for example, statistical summary information related to areas across the country, defined by digitised boundaries. A contemporary example in medicine is the use of GIS in the management of a general practice by combining address and postcode patient information with population census, road network, and the location of various services (such as pharmacies), in order to help manage workload and planning. Addresses and postcodes can also be of value to historians. For example, in places such as Edinburgh New Town, where the street layout has not changed for some two hundred years, it is possible to fix the location of the residences of merchants at different times, and map these in relation to other known attributes such as income and family size. *A visual example can be seen in the online version of this edition of Newline: <http://edina.ed.ac.uk/newline>.*

GIS software handles spatially-related data as a series of transparent layers: data from a variety of sources can be overlaid, and viewed in a GIS. Because the layers are transparent, the composite visual effect of placing layers of data on top of each other is that of a map. But the real value of GIS for geographers and non-geographers alike is that, as well as visualisation, they allow the analysis of geographic information data based on common spatial relationships: the overall result is, in effect, greater than the sum of the parts.

Geographic information is, in other words, as much about socio-economic attributes as topography. In UKBORDERS, EDINA provides UK higher education institutions with online access to a wide variety of high precision digital boundary data. The largest single user group is comprised of geographers, which is not surprising. But because the boundary data relates to a

variety of geographies (census, administrative, electoral, postal, etc.) and includes historical data, the boundaries available are used by an increasingly wide variety of users from other disciplines.

The period covered is from the mid-19th century to the present, the 1980s onwards having the widest variety of data. Because there is an increasing tendency for statistical data to include a spatial reference, such as a postcode, it is possible to link them in a straightforward way to relevant digital boundary and map data and exploit the information by use of a GIS or mapping package.

The list of examples of use of geographic information is long, and growing, as is the range of boundary data provided in UKBORDERS. With the increasing availability of affordable desktop mapping packages which allow non-geographers to explore spatial relationships in ways which were previously too time-consuming and difficult, the usefulness of geographic information to research and teaching in higher education will continue to grow. For more information see <http://edina.ed.ac.uk/ukborders/>.

Forthcoming Events

UK Serials Group (UKSG) Conference. Manchester (UMIST), 12-15 April 1999. EDINA at Stand 6. <http://www.uksg.org/conf99.htm>

Libraries and Information Show. Birmingham, 8-11 November 1999. EDINA at Stand 539.

ARCLIB'99. Glasgow School of Art, 22-23 July, 1999. Demonstration of Art Abstracts and Periodical Contents Index.

CADE99. University of Teeside, 7-9 April 1999. Joint presentation with VADS and CTIAD on 'Creating and Using Digital Resources in the Visual Arts', 7 April, 15.30-17.30. <http://www.tees.ac.uk/cade99/>

UKOLUG meeting. University of Edinburgh, 23 June 1999. Main Library, Wolfson Suite. 'Engineering Resources: Providers and Consumers'.

Edinburgh Data & Information Access

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

EDINA, based at Edinburgh University Data Library, is a JISC-funded national datacentre. It offers the UK higher education and research community networked access to a library of data, information and research resources. All EDINA services are available free of charge to members of UK higher education institutions for academic use, although university subscription and end-user registration is required for most services.

EDINA services are:

- EDINA Art Abstracts
- EDINA BIOSIS
- EDINA CAB Abstracts
- EDINA Ei Compendex®
- EDINA INSPEC
- ESPMD
- EDINA Palmer's Index to The Times
- EDINA PCI
- Ordnance Survey Strategi®
- SALSER
- UKBORDERS

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EDINA subscription and registration

Most EDINA services require the completion of a licence agreement before those services can be made available to users. Free 30-day trials are available for most of these services. Please see the EDINA web site for details of the requirements of individual services.

For UKBORDERS, there is no fee for academic institutions within the UK, but a licence agreement must be signed (email edina@ed.ac.uk) and individual users must sign an End User Licence.

For Ordnance Survey Strategi, each institution is required to hold a current and valid Ordnance Survey Educational Copyright Licence in addition to a subscription to EDINA. Contact EDINA in the first instance (email edina@ed.ac.uk).

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