

GIS

Professional

issue 39 : April 2011

...joining the geography jigsaw



Harrow implements GI across the board

JRC: mother of INSPIRE reveals all

Growing Nottingham's e-learning with GIS247

Esri's solar energy strategy

Linked Data: not in the mainstream yet but...

Ordnance Survey licensing: Phase 2 arrives

Where there's muck... there's happy residents

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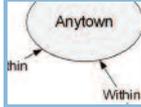
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Where there's muck – there's happy residents!

A London Borough has been using the NLPG to implement GIS across its activities. So what benefits has the council seen?



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Linked Data: a new paradigm? Part 2

In the concluding part of their article, the authors explore the concepts behind linked data and its applicability to GI.



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The licencing revolution

So does more free data and fewer words in licences mean more opportunities? Robin Waters reports on phase two of OS's shake up.



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Many fathers but only one mother. . !

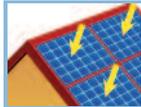
Alessandro Annoni explains how the EU's Joint Research Centre is helping to manage the development of the INSPIRE Directive.



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The value of GIS has grown at Nottinghamshire County Council with the help of GIS247 online training.



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Harnessing solar energy

GiSPro was invited to a preview of Esri's Solar Energy Planning Model, developed to help local authorities face a low carbon future.

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Front cover: Acknowledgements to Dermot Carlin for these images that illustrate London Borough of Harrow's application of GIS to their refuse collection operation. Full story on page 10.

For details of how to subscribe to GiSPro, turn to page 34.

read on...

Being an Intelligent Client

a guide to successful commissioning and managing of land and engineering surveys



By Richard Groom

a new book
FOR
managers,
engineers,
architects,
surveyors
and all who
commission
or manage
survey
projects

The concept of risk is well understood in relation to health & safety. But with surveying, people tend to focus on accuracy and precision.

Nevertheless, there *are* technical and commercial hazards in surveying and they come with expensive risks for clients.

The consequences of a survey 'accident' can be significant. Projects can be delayed. Cost implications can be substantial. Sometimes they can be catastrophic and render a project unfit for purpose – like an Olympic-sized swimming pool built too short.

This guide is intended to help those who commission and manage surveys to recognise the hazards and manage the associated risks.

In two parts, Part 1 deals with **Managing Survey Projects** and includes 20 key topics in preparing contracts and specifications as well as managing the work once a survey firm has been appointed. This is essential reading for professionals working in the built environment who appoint or manage survey companies.

Part 2 sets out the **Principles of Surveying** and covers over 30 topics, which may help reveal the hazards that can lurk in surveying processes. Engineers, architects, other professional disciplines as well as older surveyors in need of a reference point or a refresher course, will find this a reliable reference point.

The Guide is therefore intended as an essential reference source. It can also be an ideal source book on surveying for academic courses. Younger readers will find all of the essential techniques presented together with current technology and its applications.

The author is an experienced chartered surveyor with many years experience working in both the private and public sectors as well as in the UK and overseas.

Copies of *Being an Intelligent Client* price £9.95 can be downloaded from www.pvpubs.com
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welcome
to the April issue of *GIS Professional* . . .

GIS is not the problem; it can be the solution

These are dark days for many in the public sector. Local authorities are facing the toughest times. Budgets are squeezed as never before. Staff will have to deliver more and most likely for less resources and pay. Some jobs will inevitably go. But it would be a foolish council that thought getting rid of posts in the GIS or IT departments would make sense. GIS is not the problem; it can be the solution. This issue of *GiSPro* contains two case studies of how GI can boost a local authority's performance and deliver measurable savings.

The way that the London Borough of Harrow has applied geographical information is a model for the application of GI. First they used it to manage their door-to-door rubbish collection; then they applied it to optimise the delivery rounds of the garbage vehicles. Now they're using it for the delivery of a raft of other services, which are location based. They deserve the awards they won last year at the NLPG's Exemplar Awards event (see *GiSPro* December 2010). Read all about it on page 10.

We know that GI can really deliver efficiencies and savings to local authorities but it will take extra determination and dedication to persuade many hard-pressed management teams that extra training or new software really will make the difference. I am therefore delighted to include a report from the GIS training company GIS247 on their work at Nottinghamshire County Council where they have been delivering online training. An interesting aspect is that this was self-serve training. In other words, people chose for themselves what they did. The problem with that, as anyone who has tried online training knows, is that it takes some hard discipline. Mark Selby, Nottingham CC's IT leader explains 'many individuals were just not using the on-line training until we put a bit of pressure on them. Once people started using it they realised it was a valuable resource.' Like those who gain degrees through the Open University, one has nothing but admiration for people who successfully manage their own training. In this case it paid off with a star pupil and a licence renewal for GIS247.

Just as we were going to press an email dropped into my inbox mentioning the launch of a new web tool. We get a lot of these and I almost put it to one side, possibly for the next issue. But Robin Water's enthusiastic endorsement made me go and try FIND's Personalise Your Map portal (findmaps.co.uk). It allows users to load a Google map for free, as well as several other map datasets of the UK, then pan and zoom, insert push pins, draw radii, annotate and change colours. And the real beauty is you can add a few extra words of description before turning it into a saveable PDF. What a useful little tool. If we had this ten years ago, where would UK GI be today?

This issue of *GiSPro* has several other articles that I should draw to your attention. For those who've wondered who's in the driving seat for Inspire and what the ubiquitous initials JRC stand for, Allesandro Annoni reveals all about the EC's key research centre. For would-be OS data purchasers, Robin Waters reviews the vaunted new licence conditions and we take a look at Esri UK's plans for helping growth in the solar energy market. But I can't miss encouraging readers to visit Adena Schutzberg's column. Adena is an extremely perceptive observer of the GI scene and she draws some interesting comparisons between the UK's recent launch of web-based public crime maps and the US government's broadband map. Both websites crashed on the first day and were the butt of much public and media criticism. But Adena says there's no excuses. The public and the media are doing their job in setting the bar high for government online mapping.

Enjoy the April issue.

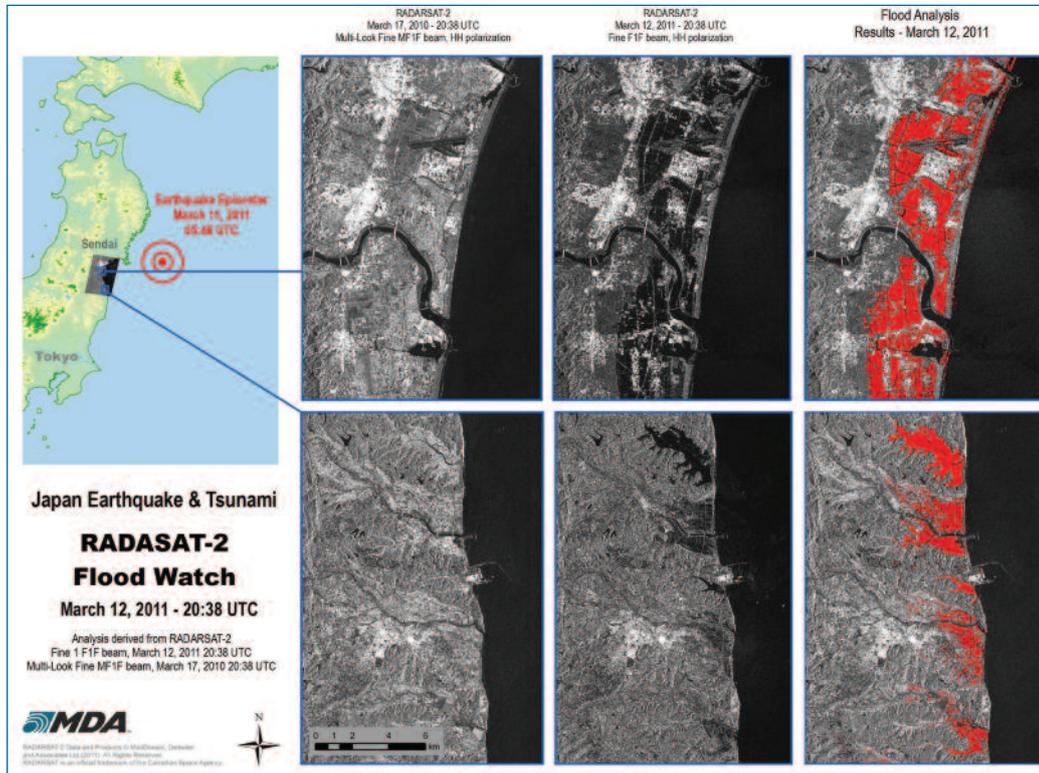
Stephen Booth, editor



The public and the media are doing their job in setting the bar high for government online mapping.



Support for stricken Japan



Following the tsunami and preceding 8.8 magnitude earthquake on 11 March that devastated areas of Japan's main island, a number of companies have answered the call for emergency support.

RapidEye has announced that its first images of Japan are now available. The imagery and resulting analysis will be used by the Japan Aerospace Exploration Agency (JAXA) to provide knowledge about the disaster to relief and governmental agencies. Also, imagery from the RadarSat-2 satellite is being used to assess damage and direct relief efforts to the main stricken areas of Sendai (above), according to MDA's Systems Information Group. The first image of the disaster was acquired on 12 March, hours after the earthquake hit the Pacific Ocean near Northeastern Japan.

Erdas is also providing access to datasets that illustrate the devastation in the country, supplied as a free web service that enables users to access various data. The company have pre- and post-earthquake images for Fukushima, the location of the compromised nuclear reactors, and Minamisanrikucho. Google has also established the website <http://japan.person-finder.appspot.com/> to help people determine the whereabouts of loved ones in in the country.

The UK charity, MapAction (www.mapaction.org), has also responded to a request for help from the United Nations. A UN disaster support team flew out to assist the Japanese Government in coordinating international assistance and a MapAction team flew to Tokyo to provide situational mapping expertise.

OS launch second phase licensing model The second phase of Ordnance Survey's new pricing and licensing model was announced at a recent event held at its new Southampton headquarters. The second phase launches two new contracts, available since 1 April 2011, to build upon the practice of making fewer, broader licences covering commercial activities. The new contracts are the Printed

Products contract and the View, Tracking and Scheduling contract. Turn to page 18 for more details.

OFT clears joint venture The Office of Fair Trading (OFT) has decided not to refer the proposed joint venture between Ordnance Survey and the Local Government Improvement and Development Agency (LGID) to the Competition Commission. In considering the

venture to create a combined national addressing database, OFT found that "the parties provide the only two accurate geo-referenced addressing databases, and do not face competition from less frequently updated and geographically accurate databases, such as those used by satnavs. Consequently it found that the joint venture would create a monopoly in this market".

Joined-up intelligence with GIS

A team of defence industry companies, led by Esri UK, has developed an interoperability exercise demonstrating how a joined-up approach to exploiting intelligence sources can better inform decision-making and help protect British troops against improvised explosive devices (IEDs). The exercise shows how using a GIS like the ArcGIS system allows these multiple intelligence feeds to be brought together, analysed by different parties, and the results overlaid onto maps and imagery that can be shared at many levels. The team also comprises: BAE GXP, ITT Envi, i2, Cobham MMI, Systematic and IHS Jane's.

New association promotes 3D

The "3D Professional Association" (3dPA) has been launched to support the education, promotion and development of those working within the 3D world. The non-profit association aims to be a resource for technical information as well as forging new relationships within the industry. Membership will consist of providers, users, developers, academic community, and vendors and is open to those who desire to learn and participate in taking the world 3D. For more information, visit www.3dprofessional.org.

Conference seeks new approach

Registration for Esri UK's 2011 annual conference, scheduled for 16-17 May at the Hilton London Metropole, is now open. Entitled "New approaches for our changing world", the conference aims to explore how GIS technology is being used as a strategic and operational tool to help businesses and organisations make more informed decisions, helping to drive efficiencies and operational effectiveness. To register, visit www.esriuk.com/eukac2011.

Gazetter best practice day

The next emergency services gazetter best practice day is scheduled for 11 May in Sheffield and is open to

anyone within the emergency services who creates, maintains or uses address data. Organisers Aligned Assets has also scheduled five street naming and numbering best practice days with venues in Oakham, Newcastle, London, Llandrindod and Taunton. These events will consider best practice in, as well as the legalities of, street naming and numbering through first-hand experiences, presentations and debate.

Britain from the air The 100 aerial images that formed part of the recent Britain from the Air exhibition in Bath can now be viewed on an interactive map created using Ordnance Survey's OS OpenSpace service. The exhibition was opened in September by **Michael Palin**, president of the Royal Geographical Society, and offered visitors the opportunity to see Britain as seen from its skies. Now, the online map (http://bfta.rgs.org/bfta_onlinemap.html) allows visitors to zoom and pan across the country with click-on icons to read more details about the image. Also, the outdoor exhibition is next expected in Oxford between 24 June and 4 September 2011.

COMPANIES & PROJECTS

Addressing fuel poverty

A number of UK local authorities

have awarded contracts to Bluesky to map heat loss from properties. Areas to be surveyed include Leeds, North Lincolnshire, East Lindsey, Bassetlaw and Breckland.

Bassetlaw District Council in Nottinghamshire has commissioned a night-time thermal survey to help address fuel poverty and provide detail on private housing stock across the district. Bluesky will record measurements of relative heat loss from individual buildings, delivering a property-level digital map for the council's GIS. The council is planning to overlay the thermal map in its GIS, combining it with other housing related intelligence. The property specific intelligence will then be used to identify individual properties and streets at risk of fuel poverty and target council resources effectively.

Energy map for Nottingham

Nottingham City Council has appointed Esri UK to develop an interactive energy map to help reduce carbon emissions across the city. The GIS-driven energy map will highlight a range of actionable opportunities, from streets that will benefit from greater wall insulation to properties with south-facing roofs suitable for photo-voltaic panels. Combining the spatial analysis of ArcGIS Server with the LocalView Fusion GIS platform, the company

Aerial Cheshire



Chester Zoo captured from the air as a Bluesky aircraft flew over during the aerial survey of Cheshire.

Councils in Cheshire, England have been supplied with a package of aerial maps including countywide coverage of 12.5cm resolution aerial photography, plus colour infrared survey and a height model (digital terrain model). The map data from Bluesky will be used by staff at both Cheshire West and Chester Council and Cheshire East Council with access via the councils' desktop GIS and "WebGIS" intranet systems. The datasets will be used for applications including assessment of planning proposals, viewing street furniture, investigations into highway width and to examine how historically contaminated sites relate to their contemporary setting.

will develop two separate interfaces of the map, one for local citizens and the other for council planners, energy managers and local businesses.

Solar map for Bristol Bristol City Council has awarded Blom UK

and German partner Sun-Area, a contract to provide an interactive solar potential map of the city. The map will be integrated with the council's website to allow local property and business owners to find out if their buildings are



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- 

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- 

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- 

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- 

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3D Building Models
- 

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 e sales@bluesky-world.com





Comparing imagery

Getmapping has delivered 2010 aerial imagery to Mid Devon District Council to provide a detailed, up-to-date backdrop to the council's mapping systems. The new imagery is served across the Council's network to 175 potential users as a layer along side Ordnance Survey maps, earlier aerial surveys and specific asset data created by the council. Being able to access imagery captured at different dates and times enables direct comparisons to be made. This can be useful for a range of tasks, from contaminated land assessment to planning enforcement.

suitable for solar PV or thermal panels. The map will provide a detailed analysis of every building in the city, taking into account the orientation, height, pitch and shape of each roof, as well as shading from obstructions including trees, buildings and terrain.

Infotech Enterprises America has completed a photogrammetry and GIS base map development project for the City of Cambridge, Massachusetts. The project involved acquiring new imagery to deliver 1"=40' mapping scale base map data along with 3" true colour and colour Infrared (CIR) digital orthophotos, 1' contours and detailed planimetrics.

The Darfur Land Commission (DLC) has selected GAF, an international consulting company, to set-up a natural resources and land use

database and map for the Darfur region in Sudan. The project's objective is to establish a multi-layered natural resources information system that provides basic land management and planning information to help decision-makers and planners to establish plans for agricultural development.

BRIEFS

The history between Ordnance Survey and the city of Southampton is being celebrated in an exhibition at the Southampton Maritime Museum. Open to visitors until 5 June, *Ordnance Survey In Southampton: Mapping Great Britain Since 1791* also showcases artefacts illustrating past cartographic techniques. For more details, visit [www.southampton.gov.uk/s-](http://www.southampton.gov.uk/s-leisure/artsheritage/museums-galleries/maritimemuseum.aspx)

[leisure/artsheritage/museums-galleries/maritimemuseum.aspx](http://www.southampton.gov.uk/s-leisure/artsheritage/museums-galleries/maritimemuseum.aspx).

Exprodat Consulting's oil and gas based GIS training courses are now included in the Association for Geographic Information's (AGI) continuing professional development (CPD) scheme. For more information, visit www.exprodat.com/Training/Training-Programme/Courses/.

Esri UK supplied the software and services behind insurer NIG's geospatial insurance underwriting system, which has won the Insurance Times insurer innovation award for 2010.

WhereCampEU 2011 will take place on 27-28 May in Berlin, Germany. As an "unconference", the event is open to everyone with an agenda driven by attendees speaking and contributing. For more information,

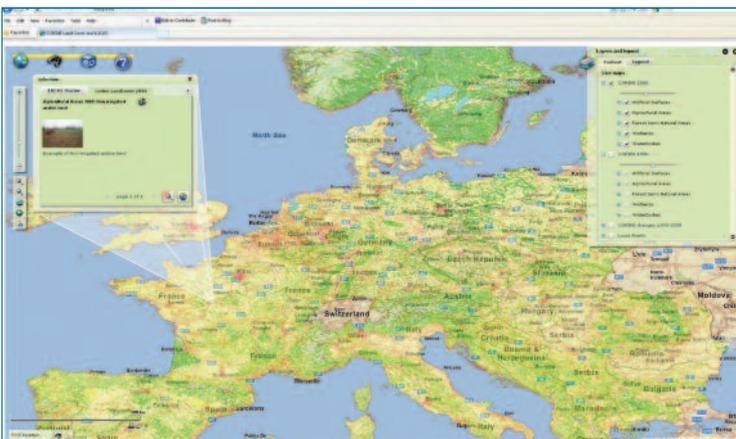
visit <http://wherecamp.eu/>.

Aligned Assets are offering consultancy to both the public and private sector on the impact the National Address Gazetteer, the combination of Ordnance Survey's addressing products with the National Land and Property Gazetteer, will have on their organisations.

Esri has developed a web application (esri.com/australia) that provides mapping and analysis to enhance Australian flood information supplied through the Ushahidi social network (Ushahidi is a non-profit company that develops free and open source software for information collection, visualization and interactive mapping). The network allows people to report incidents via SMS, e-mail or the web.

Global Geomatics, based in South Africa, is using a StreetMapper mobile laser mapping system from 3D Laser Mapping to compliment its capabilities in aerial mapping, underground detection and 3D laser imaging.

In a recent blog, "So what about Open Source?", Eamonn Doyle, Esri Ireland's CTO, considers the Local Government Computer Services Board's move from Microsoft to using open source. He agrees with Tim Willoughby at the Board that we need to better prepare local government for the semantic web



Open access to EEA data

The European Environment Agency (EEA) has signed a three-year Esri enterprise licence agreement to help it deliver open access to data for nations, agencies, scientists and policy makers to view and analyse. During the next year, the agency, Esri and its distributor, Informi GIS, will work together to: develop a cloud architecture serving the EEA's initiatives and European Union directives; share data in line with the principles of the EU's Inspire spatial data infrastructure initiative; and create a collaborative plan that supports information sharing about the environment throughout Europe as part of the Eye on the Earth initiative. To view the data available, visit ArcGIS.com.

and web 3.0 technologies but is 'not so sure that Open Source is the only, or necessarily the best, strategy for achieving these objectives'. He argues that the characteristics that local authorities want in GIS technology are not 'necessarily characteristics that one would instantly associate with Open Source software'. Read the full blog at <http://esriireland.wordpress.com/>.

In research by analysts Gartner, over a half of respondents questioned are planning to adopt open source software, believing it will give them a competitive edge. Details include: 46% of businesses are already using open source in specific departments and for particular projects; 22% have adopted open source consistently across all departments; and another 21% claimed to be evaluating its advantages. Bertrand Diard, CEO of open source integration software vendor Talend, says 'I have long argued that the benefits of open source go beyond the cost of using such software'.

Her Majesty's Land Registry has selected the open source data management tool, Talend Integration Suite, to improve data integration for its business intelligence warehouse and to support the department's business intelligence project.

Esri has released volume 3 of its Essays on Geography and GIS free e-book series. The collection of essays and articles feature insight into the power of spatial thinking from thought leaders in the fields of geography and GIS.

The UK district council, Fenland in Cambridgeshire, together with the local Valuation Office, has introduced working practices, based around the National Land and Property Gazetteer, to ensure bills for non-domestic rated properties such as businesses are issued to the correct address.

The GIS Centre of Excellence within the Office of Agriculture and

Geoinformation (ALG) in Switzerland has purchased LizardTech's GeoExpress 8 image compression and preparation software. The centre will now convert its aerial photographs to the software's MrSID format to overcome the storage and access problems of these large files.

DigitalGeo, a start-up Portuguese GIS distributor, has been selected to represent Ashtech's GIS product line in Portugal.

Renfrewshire Council has employed satellite monitoring on its road gritting fleet to map routes and track vehicle activities. The web-based Masternaut system provides the council with time and location records of all gritting activities.

Cheshire East Council are using the Symphony iManage gazetteer management system from Aligned Assets to manage its Local Land and Property Gazetteer. The system was chosen for being efficient, user-friendly and cost-effective and to improve frontline services.

Socitm, the association for public sector ICT management, has named Surrey Heath Borough Council's website as one of the top local council websites in the UK in its Better Connected 2011 report.

NEW APPS

Avenza Systems has announced an updated version of PDF Maps, the geospatial PDF reader for Apple iOS devices including the iPhone, iPad, and iPod Touch. Features include: a tool to find the coordinates of any location in the map.

Esri has expanded its ArcGIS offering to include a free Windows Phone 7 App allowing users to download mapping capabilities on their mobile device, including the ability to use and share maps and deploy GIS data and functionality.

PEOPLE

IA appoints NLPG custodian



Neil Silley has been appointed as the new custodian of the National Land and Property Gazetteer (NLPG). He will be responsible for the coordination of inputs from local authorities across England and Wales to ensure the quality and accuracy of the national database. Silley has been with Intelligent Addressing, the company that manages the NLPG for local government, since 2005 and has been managing the team that provides day-to-day support to LLPG custodians in local authorities across England and Wales. **Simon Barlow**, the custodian for the last ten years, retains overall responsibility for the gazetteer services teams and continues to work on the Inspire directive's implementation of address-related datasets as the representative of UK local government.

Senior appointments

Esri UK has appointed general managers for three of its strategic business practices. **Stephen Leece** will lead the local and central government practice and brings senior level experience of this sector, having previously worked with Accenture on government projects. Managing the utilities and telecoms practice, **Peter Mingins** joins the company from HCL Technologies where he was responsible for GIS propositions and technologies for utilities across Europe. **Amanda Turner**, leading the commercial practice, previously worked as strategy director for QinetiQ and has also worked in the oil industry in the UK and USA.

Former Major joins Esri Esri UK has appointed Adrian Friend, formerly a Major in the Royal

Engineers, as strategic account manager for its MOD (UK Ministry of Defence) customers, the Intelligence Collection Group (ICG). Adrian brings over twenty years of experience to the role having been the lead geospatial representative within the security policy and operations division, joint capability, MOD. He also provided strategic policy and advice for senior MOD and government staff up to cabinet level on joint intelligence, surveillance, target acquisition and reconnaissance (ISTAR) and information superiority.

Hobona appointed as consultant

Dr Gobe Hobona has joined Envitia as a technical consultant and will be part of the consultancy team supporting business development, sales, engineering and other operations. He holds a PhD in geomatics and was most recently a researcher at the Centre for Geospatial Science (CGS) within the University of Nottingham where he led multiple work packages on the Inspire-based GIS4EU project, developing complete processes for harmonising data.

New roles at Blom

Barney Butterell has moved into a new role within Blom UK's commercial team focusing on renewable energy and environmental markets. Joining the commercial team are: **Paul Chandler**, who will develop the company's presence in the oil, mineral and gas sector; **Greg Lewis**, for the utilities and international development sectors; **Travis Mayne**, for the engineering and transport markets; and supporting the team with bid management are **Andy Fleetwood** and **Vicki Griffiths**.

Developing business

GeoSpatial Experts, an American photo-mapping software company, has appointed **John Clark** as director of business development. With 20 years of business development and marketing experience, Clark will expand and manage the company's business partner programme and work with partners to identify opportunities in key markets.

ROI case study Harrow



Photo credits: Dermot Carlin



HARROW COUNCIL recognised that their waste collections system could be improved using geographic information (GI) technology and more efficient processes. But when the council ventured into this realm they and partners Capita surprised themselves with the levels of saving achieved, estimated at £3.2m over ten years.

To achieve this goal the whole waste collection and disposal process from doorstep to landfill was looked at. What was previously a good but paper-based system was restricted and included lengthy time delays in information passing between collection crews, back office teams and residents.

Improvements were identified and the business case was simple – collecting rubbish more efficiently and recycling more of it added up to millions of savings. GI lay at the core of the project; take it out and the concepts fell apart. Now it provides the key backbone to the system along with the integrated technology it sits on.

Harrow's new waste management system handles

Where there's muck... there's happy residents!

A London Borough has been implementing GI through the NLPG across its activities, delivering major cost savings, winning awards and more importantly, providing better services to residents. Andrew Coote introduces **Matt Pennell's** and **Luke Studden's** article.

This is the first of a series of articles on best practice in developing business cases for geospatial information and technology. We start with looking at a local government case study. Local government GIS is "at the eye of the storm" at the moment, being asked to help generate efficiencies for their organisation as part of IT-led service transformation to meet the Government's cutbacks whilst facing reductions in their own resources.

What is impressive about the team at Harrow Borough is that they start from the perspective of evaluating the benefits to the organisation and its customers. They also recognise that GIS is just a means to solving a business problem and so have been part of a much larger team that has realised some very impressive benefits.

As a result, their senior management have had the confidence to back them on a number of projects which they have been able to implement with the minimum of "internal" barriers. The team has rightly been rewarded by multiple awards for their work, most notably at the NLPG awards in Sheffield last November.

three bin types for each property: recycled waste, general waste and organic waste. Each bin is linked to a unique property reference number (UPRN) held in the LLPG – the local land and property gazetteer. This system is wirelessly linked to vehicle cabs and integrates internally with the call centre's customer relationship management system (CRM). This allows the driver to update collection or missed bin information in real time which is relayed to back office and CRM systems. Both systems independently receive address updates on a daily basis from the LLPG.

Residents' enquiries Forms on the *MyHarrow* web portal are also linked to the CRM and the waste management system; these are facilitated by the LLPG. The forms allow residents to enquire about missed bins and receive up-to-date information on why their bin was not collected or if in fact the bin lorry is not quite there yet. In addition, the LLPG is also used for the waste management system's integrated route optimisation module, which is already delivering a 15% reduction in fuel use.

GI is integrated into the final solution in many places. For example, RouteSmart in ArcMap consumes Ordnance Survey ITN and LLPG data and provides route optimisation on a nightly basis for commercial waste collections; the key identifier for location and bin ID is the LLPG's UPRN. Back office



... the business case was simple, collecting rubbish more efficiently and recycling more of it...



ROI case study Harrow

managers can view the location of vehicles using GPS trackers and missed bin information has a spatial location and can be analysed in ArcMap.

Use of the web is growing with transactions via this channel, making up nearly 60% of the total as Harrow residents choose to self-serve when it comes to waste and recycling queries. In the Access Harrow call centre there has already been a noticeable change, with overall call volumes down by 3%, those associated with the environment down by 7% and those specifically to do with missed bins down by 25%. These amount to over 200 fewer calls per week. 95% of the remaining calls are being resolved at first contact. Furthermore, the number of outbound follow-up calls has been slashed by 95%. Call duration has also been cut by 45 seconds on the average call, which lasts 248 seconds. Costs too have been reduced significantly from £2.23 per enquiry in 2006/7 to £0.82 in 2009/10.

Reducing environmental impact An associated benefit, in addition to the financial savings, is the huge reduction in environmental impact, thereby dramatically reducing Harrow's carbon footprint. The recycling rate for household waste is on target to reach 50% in 2011 while the amount of waste going to landfill has been reduced by 18.8%. These new services are all underpinned by the council's high quality address database, the LLPG. Reduction in fuel usage through effective route optimisation saved £11,000 in year one alone and is yet another green benefit.

As new properties get built, or existing ones get converted into flats, the LLPG is updated and routes automatically re-calculated. In a fast-growing borough like Harrow, with a number of new developments, the accuracy of the LLPG is vital to maintaining these levels of service efficiency and in moving forward the council's carbon footprint reduction plans.

After a year of the project going live, further spatial analysis of collection data was undertaken. Each time a bin is not collected, a reason is recorded, such as "bin not out" or "contaminated bin", e.g. plastic bag in the organic brown bin. This data was

Photo credits:
Dermot Carlin



Route optimisation means a lower environmental impact and fuel savings. Meanwhile, in-cab technology provides a direct link to the Harrow's LLPG and CRM systems.



analysed to highlight the geographical areas or streets that were not complying; intensive door-to-door knocking was undertaken in the worst offending areas to educate residents in the correct procedures and collection days. This further reduced the number of calls coming into the call centre as it proactively targeted the source of regular issues.

The success of the Waste Collector project in local and national awards including the NLPG Exemplar Awards has delivered a key benefit: recognition that GI can deliver savings in a big way. This has led to a corporate understanding and recognition in other existing and upcoming projects.

But that's not all. . . Harrow's GIS Team work on the basis that unlike polygons, GI has no boundaries and the sharing of GI project ideas, skills and data is key, especially in difficult financial times. Growing GI recognition is the backbone of a high percentage of council processes.

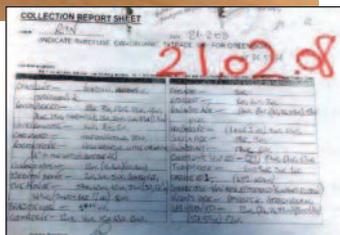
Harrow has also developed an in-house online citizen information portal, *MyHarrow*. This was initially created to deliver location-based information



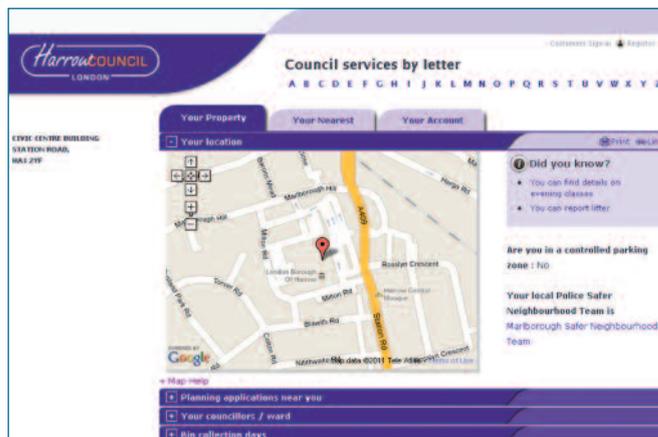
. . .the accuracy of the LLPG is vital to maintaining these levels of service efficiency. . .



Before the new system: lots of paper records, grubby job sheets. . .



Location enabled, *MyHarrow* is the council's citizens' portal.



ROI case study Harrow



Harrow's integrated solution brings together the LLPG, the council's CRM and in-cab guidance to deliver substantial savings and better services to residents.



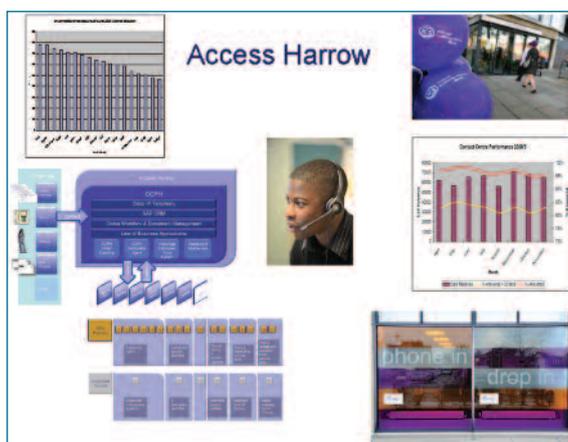
The aim is to maximise vehicle usage and cost savings through route optimisation no matter how small.



to residents based on their location, such as bin collections and local councillor information. MyHarrow, now moving into phase 6, has grown and adapted to include more and more information and has become a driver in the council's channel migration efforts to move to more cost-effective methods of communication. Harrow recently integrated its customised Experian customer insight data into MyHarrow to deliver a targeted marketing solution that allocates cross-selling "Did You Know" links relevant to each customer, based on their address.

To underpin this, Harrow developed an Esri-based solution called the "LLPG Integrator", which links the LLPG into widespread council functions. By using Python programming language to automate geo-processing tasks, the LLPG is spatially enriched with a plethora of attributes and is placed at the core of address capture and look-up channels such as web forms, enabling residents to report / request services, location-based services and address search utilities. The benefits are multifaceted and spearhead one of the council's key corporate priorities of delivering "Cleaner, Safer Streets" for residents.

Widening GI access To widen the access of GI, Harrow started the "Hub Maps" project to develop a lightweight intranet mapping system providing access to GI for all staff whilst also making significant cost savings. The project is shifting a number of desktop GIS users to the Hub Maps and therefore frees up associated desktop GIS licence fees. In addition, the infrastructure built around the Hub Maps



project facilitates our corporate "Mobile and Flexible Working" project, a move towards a mobile workforce that can work more efficiently from more locations. Hub Maps allows our GIS infrastructure to be highly accessible to all staff, enabling them to use it in or out of the office. Hub Maps will display data from ArcSDE, ArcServer and external geo-referenced web services.

The proliferation of GI in society has led to an increasing understanding of location and proximity. We now have residents who are spatially literate and spatially aware. To meet this change Harrow are placing mapping and Esri technology at the front of customer services and incident reporting in the borough. The Streets & Ground Maintenance Project is aimed at delivering an improved service to residents enabling them to mark incidents on a map, which they wish the council to know about such as fly tipping in a park or broken street lights. Previously, staff had rough textual descriptions to guide them to a problem. Now, by getting incidents reported on a custom built Esri map interface, staff can pinpoint the location and take action quicker and at the same time residents can fully exploit the services we provide which are underpinned by GIS.

The little things count The GIS team also considered just how many vehicles head out on the roads each day delivering a huge range of council services. So building on the big route optimisation projects, we decided that it's now time to think on a more granular scale – every last mile saved counts! Using ArcLogistics, we are reviewing as many small driving routes as we can, starting with Meals on Wheels. The aim is to maximise vehicle usage and cost savings through route optimisation no matter how small. It also doesn't stop there. We have council officers out on foot everyday conducting a range of visits. The potential to optimise their routes represents a great opportunity to maximise use of their time.

Council staff would like to be available all the time to serve residents but we can't be everywhere at once. To tackle this, Harrow plans to put some video contact booths around the borough to make contacting the council a bit easier for those not near the One Stop Shop. Using GI analysis with the help of Network Analyst, ArcMap and Experian Mosaic data, we have worked out the best places to place these booths to maximise usage by the correct demographic and service users. The ease and speed of analysis in ArcMap has highlighted to senior management the key importance of basing decisions on good GI.

• The GIS team at Harrow are keen to share their experiences, so that the innovations they have been able to implement can be shared across the local authority community. Matt Pennells and Luke Studden can be contacted at gisteam@harrow.gov.uk



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ON FEBRUARY 1, the Home Office website, www.police.uk, went live. That day, residents and those around the world keyed in postcodes to see maps of crime in areas of interest. But with hits on the server rising to 75,000 per minute that day, the site ground to a halt and had to be taken offline by late morning. The £300,000 project provides, for the first time, information about different types of crime and behaviour at the street level.

On February 17, the US Department of Commerce announced its nationwide broadband map, broadbandmap.gov, was live. That day residents and those around the world explored where the country had broadband and where it did not. With an average of more than 60,000 requests per minute, it too had some ups and downs. The

the US broadband site was noted as being slow or simply not drawing, a commenter on one blog was quick to blame Esri and its software. The site was built on a 100% open source stack but that was not a key element of most coverage. That fact was, however, included in one of many press releases about the broadband map.

While there were clearly some less than pleasant moments for these websites and their backers and developers, I want to suggest that online mapping is really in a healthy position based on these two projects. Why?

- *The public expects value from mapping projects. While it may not be obvious what the value of such maps are at launch, those behind them*

A Tale of Two Nationwide Maps

Two costly online mapping projects have faced criticism from the public following launches fraught with problems. So is online mapping heading downhill? **Adena Schutzberg** thinks the public are simply doing their job.

project costs about \$200 million over five years and aggregates data from states and territories, each of which built its own map.

The reactions to the maps from users were quite parallel and may well extend to any small scale, highly publicised mapping effort. In no particular order, reactions to both maps included:

- **Waste of money!**
- **The data is bad/incomplete/out of date!**
- **The site crashed; didn't they expect/plan for this kind of activity?**

The maps did reveal keen interest from the public and the media about the local situation. And many articles appeared that attempted to answer the question: What's the crime/broadband like in the community? The ups and downs of the sites prompted quick replies from the organisations behind them, detailing how much traffic came to the website and confirmation they were working on fixes for downtime and data errors.

What seemed to be of very little interest to the general public, and even the technology press, was the technology powering these sites. In fact, when

need to line up their "return on investment" statements for the one, five and ten year anniversaries of launch.

- *The public expects online maps to be up and running all the time, especially at launch. I for one was surprised neither of these sites held up under first day strain, even with all the talk of the simplicity of taking advantage of the cloud and an scalable architecture within the geospatial community.*
- *The public wants the data to be accurate and up-to-date. The crime map has a Feedback tool to evaluate the site, suggest future functions, ask for more information and provide open comments. The broadband map has a tool for input and the organisation behind the map had, by early March, already received some 30,000 comments, which will be distributed back to the states. Once the states review them and update their respective maps, the national map will be updated.*

All in all, I think the public and the media are doing their job in setting the bar high for government online mapping. I'm truly pleased the interest and expectations are so high.



The reactions to the maps from users were quite parallel and may well extend to any small scale, highly publicised mapping effort.



linked data part two

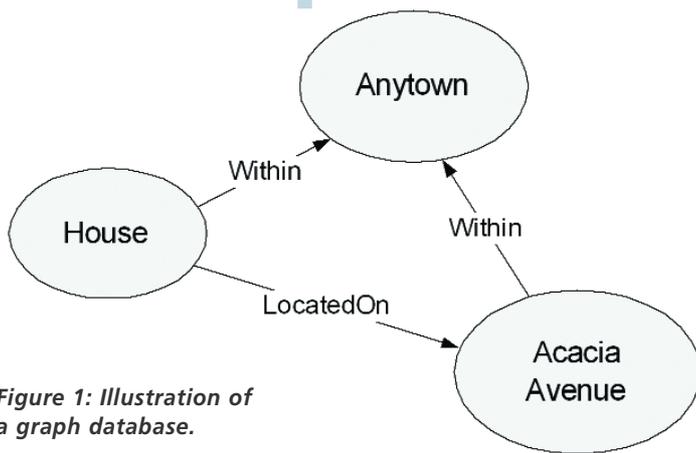


Figure 1: Illustration of a graph database.

IN PART 1 OF THIS ARTICLE (*sGIS Professional*, Issue 38: February 2011) we introduced “Linked Data”, which has been promoted as a novel means of establishing and exploiting linkages using the “semantic web”, i.e. methods and technologies to allow machines to understand the meaning – “semantics” – of information on the world wide web. By this means, information can be leveraged from hitherto inaccessible sources. Linked Data, it is argued, can be used in the context of geographic or location

Resource Description Framework (RDF)

Graph Databases: The underlying basis for Linked Data is the ‘graph database’, which is the “Framework” in RDF. Graph databases are unlike relational or hierarchical databases with which we are more familiar and in which some data items take precedence over others, e.g. primary keys or parent nodes. In a graph database resources are related to, or have relationships with, other resources or things, with no individual resource having any greater importance than any another. Relationships are explicit and not implicit.

RDF: To describe or model information in the semantic web database statements in the Resource Description Framework (RDF) language are the equivalent of hypertext links. An RDF statement says that one item of data has some kind of relationship to another item of data. RDF statements about the web resources in scope are expressed as subject-predicate-object. These expressions are known as “triples” where the subject denotes the resource and the predicate denotes properties of the resource and expresses a relationship between the subject and the object. “Stevenage is within Hertfordshire”; in RDF it could be a triple: a subject denoting “Stevenage”, a predicate denoting “within”, and an object denoting

Linked data: the new paradigm for geographic information? Part 2

In the concluding part of their article, **Les Rackham**, *ConsultingWhere* and **Robin Waters**, *RSW Geomatics* explore the concepts behind Linked Data and its applicability to geographic information.

information as readily as in any other context.

In this second part, we explore and critically examine some of the concepts behind Linked Data and their applicability to geographic information in more detail. This is a large and rapidly evolving subject and we can only touch on certain aspects. References to further sources of information are provided.

As we outlined in part one, Linked Data uses the concept of (i) publishing the data structured so that machines can read it and (ii) establishing links between disparate data resources so that machines can navigate the links and use the web like a single database. Welding these resources into a “database” requires knowledge of the relationships between them and a common understanding of the meaning of real world objects or things within scope.

Linked Data uses mechanisms for exposing, sharing, and connecting pieces of data, information, and knowledge on the web using Uniform Resource Identifiers (URIs); the Resource Description Framework (RDF) language; and formal syntaxes for defining ontologies such as the Web Ontology Language (OWL). A query language - SPARQL (pronounced “sparkle”) – enables users to access Linked Data.

“Hertfordshire”. These have to be machine readable so the subject and object must be uniquely identifiable and findable on the web, and the predicate (relationship) must also be unambiguously defined.

In a graph form (see Figure 2) the subject, “Stevenage” has been given a URI created by Ordnance Survey <http://data.ordnancesurvey.co.uk/id/50kGazetteer/221829>. The object “Hertfordshire” is <http://data.ordnancesurvey.co.uk/id/7000000000003909> and the predicate is <http://data.ordnancesurvey.co.uk/ontology/spatialrelations/within>, which points to an ontology where “within” has been defined. Note that the object of one RDF triple can then be the subject of another.

Objects can be either subjects of another RDF statement or “literals”, i.e. actual values. In this example the subject can be described with an explicit name “Stevenage”. This is done using the predicate ‘name’ from a different vocabulary – in this case Friend of a Friend (foaf) (see Figure 3).

RDF statements can be written in a number of formats such as XML.

Creating RDF links: RDF needs explicit relationships between things modelled in the datasets within



The underlying basis for Linked Data is the ‘graph database’... with no individual resource having any greater importance than any another.



scope. For datasets with geographic elements these will be common place names, addresses, postcodes, identifiers, co-ordinate positions or anything else that enables a link to be made with some degree of assurance, using automated or semi-automated approaches. Ensuring that links are to the objects intended needs care. A place name used in two different applications may have involved different views or abstractions of the object.

URIs: Uniform Resource Locators (URLs) are familiar as the addresses of documents on the web. URIs are a more general way of identifying any thing in the world (or beyond). By expressing URIs using the HTTP protocol it is then possible to retrieve the resource (e.g. document in XML) that describes the resource that the URI identifies, i.e. the URI can be “dereferenced”.

For example a URI for every postcode in the country has been created by Ordnance Survey. The postcode for the publishers of *GIS Professional* is SG1 4AT. The URI for this is <http://data.ordnancesurvey.co.uk/id/postcodeunit/SG4AT> and looking up this URI will bring you to a description of the resource. In fact the resource, in this case, also provides links to administrative areas.

URIs can identify both real-world objects (*non-information resources*) and the *information resources* that describe these objects. There are mechanisms that enable clients to distinguish the different types of URIs.¹ This is particularly relevant to location where there is often confusion between the real-world object, e.g. a house, the abstraction or model of the house for an application (feature) e.g. bounding walls and how we represent this in data, e.g. geometry and attribution, address and so on. There are also URIs for concepts and relationships so that a link to vocabularies and ontologies can be established. For example, Ordnance Survey has published an ontology for spatial relationships².

Different information providers can establish their own URIs including those for geographic locations. Stevenage is:

<http://data.ordnancesurvey.co.uk/id/50kGazetteer/221829> in the 50k gazetteer

<http://dbpedia.org/resource/Stevenage> in DBpedia³ and

<http://sws.geonames.org/2636940/> in GeoNames⁴:

Do these URIs refer to the same real world thing? Are they true URI aliases? Ordnance Survey describes Stevenage as a “named place” and DBpedia describes it as a “populated place”. Are they referring to a loosely defined built-up area, a formally defined administrative area or what? The information resources themselves do not really help. Whether or not this matters will depend on the application. Unless one or more of these URIs is further linked to a more precise definition there is no

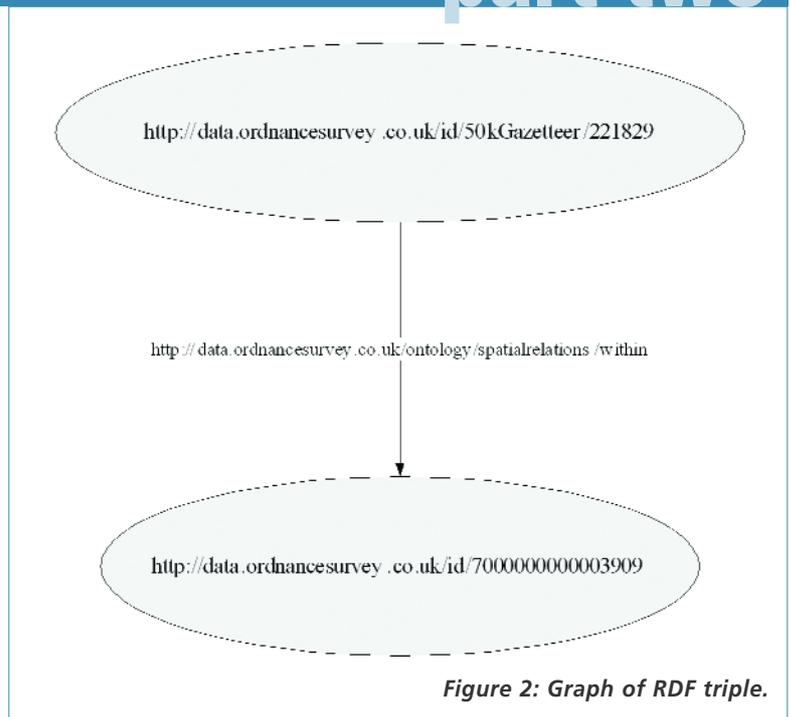


Figure 2: Graph of RDF triple.

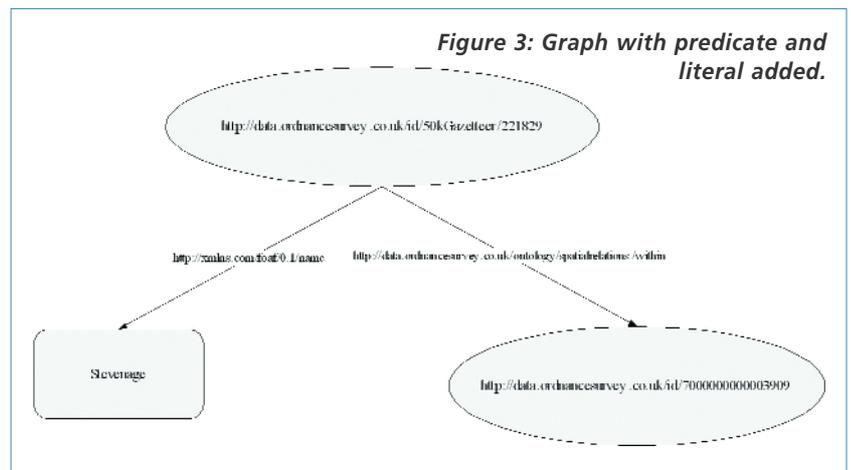


Figure 3: Graph with predicate and literal added.

way of finding out and there is therefore imprecision about what Stevenage is and its geographical extent.

This raises two issues. There is no single authority (other than, arguably, for administrative areas) for different locations or feature types in UK – so what’s new? Secondly, there is no agreed structure for URIs relating to real-world locations.

The UK’s Chief Technology Officer Council has issued guidance on designing URI Sets for the UK Public Sector⁵ and the UK Location Programme has extended this to deal with URIs for “spatial objects”⁶.

There are also issues about the sustainability and maintenance of URIs. Organisations that create identifiers for a particular domain, for example, land and property may change over time. When a URI is dereferenced it may be found that the organisation (or at least its URL) no longer exists. Further, the thing being identified may no longer exist or may have changed.

linked data **part two**



Linked Data has to be self-describing such that when an application encounters data described by terms with which it is unfamiliar, it can dereference the vocabulary term and find the definition.



Putting meaning into RDF

RDF vocabularies: Linked Data has to be self-describing such that when an application encounters data described by terms with which it is unfamiliar, it can dereference the vocabulary term and find the definition. The implication is that creators of Linked Data should look to established vocabularies before creating their own.

There are a number of general vocabularies in existence, which can be used in an RDF context, for example SKOS⁷ (Simple Knowledge Organization System). Relationships can be expressed using FOAF⁸ (Friend of a Friend). But these are not specific to geography. As noted above, Ordnance Survey has created a number of vocabularies to describe spatial relationships.

OWL & Ontologies An ontology provides a shared vocabulary, which can be used to model a domain - the type of objects and/or concepts that exist, and their properties and relations⁹.

In the Linked Data world, the Web Ontology Language (OWL) is used to describe ontology. RDF models can be encoded using OWL such that ontologies can themselves be RDF documents. For geographic information, examples would be: What is a building? How do we recognise one? Which terms do we use to name it and communicate its existence to others? Can we group it with other similar things and, if so, on what basis?

Hosting Linked Data There are a number of options for hosting Linked Data depending on the size of the dataset and its rate of change. For small fixed datasets, it can be a static file. For larger and more dynamic datasets, RDF can be generated from a conventional database and served as RDF. There are also existing tools for hosting triplestores such as 4store¹⁰ or Sesame¹¹ and existing services offer hosting e.g. Talis¹².

SPARQL query

This example of a SPARQL query is taken from the [LinkedDataTools.com](http://www.linkeddatatools.com) website at <http://www.linkeddatatools.com/querying-semantic-data>. When executed on <http://services.data.gov.uk/education/sparql> it will return the names of all the schools in the UK in administrative district 00AA (City of London), and order the results in alphabetical order. In SPARQL, variable names are prefixed with the question mark (“?”) symbol.

```
PREFIX sch-ont: <http://education.data.gov.uk/def/school/>
SELECT ?name WHERE {
  ?school a sch-ont:School.
  ?school sch-ont:establishmentName ?name.
  ?school sch-ont:districtAdministrative <http://statistics.data.gov.uk/id/local-authority-district/00AA>.
}
ORDER BY ?name
```

Accessing Linked Data How is Linked Data discovered and used? As with any other data, there is no definitive or foolproof way of finding all Linked Data that may be of interest or relevance. In UK, data.gov.uk provides a good starting point for what is available in the public sector. But, at the time of writing, there were only 435 RDF format Linked Data resources listed including the 50k Gazetteer and CodePoint Open from Ordnance Survey. For geographic information, the site will shortly be enhanced by the UK Location Programme launching a discovery metadata service but this will be for all types of geographic information, not specifically Linked Data.

Once found a Linked Data browser makes it possible to follow links through the data just as one might step through documents on the normal web. Marbles¹³ is one such example.

SPARQL: The triples of RDF data can be queried using SPARQL (SPARQL Protocol and RDF Query Language - pronounced “sparkle”). A SPARQL query has a similar form to the more familiar SQL database query language:

- PREFIX – the relevant namespaces,
- SELECT – what should be selected
- FROM – the source of the data
- WHERE – the triple pattern
- ORDER BY, etc – the modifiers

A “SPARQL endpoint” is the web address of a published triplestore. It enables a dataset to be queried – by human or machine – with results usually returned in a machine-readable format. The OGC (Open Geospatial Consortium) is working on GeoSPARQL, a spatial extension for geographic information¹⁴.

Linked Data applications To date there have been many applications that include some link to location often using resources in GeoNames and DBpedia and latterly those provided by Ordnance Survey. However, most of these model geography in a very simple way as a point or a place name. More complex modelling of geographic objects and spatial relationships is rare although Ordnance Survey has demonstrated what can be possible.

The Environment Agency has piloted the use of Linked Data for their bathing water monitoring programme¹⁵. For other examples of the use of Linked Data in UK see the data.gov.uk website.

OGC are now actively working on Linked Data standards and the ISO Technical Committee 211 has also started work. In UK, the Digital National Framework (DNF) now accepts that Linked Data is the key to interoperability and sharing of location information. DNF and the UK Location Programme have organised a number of workshops¹⁶ and there is useful information on the Location Programme website¹⁷. The use of URIs is also compliant with INSPIRE Directive Implementing Rules.

Conclusions At the end of part one of this article, we posed the question, “is the hype surrounding Linked Data justified” and concluded that the jury is still out. In this part we have shown that there are grounds for some scepticism but there are also indications of considerable potential. Arguably, there is a ‘chicken and egg’ problem in respect of tools and data and also business justification. We cannot yet point to any large applications as exemplars for others to follow.

Linked Data for location is in its infancy – Ordnance Survey has done pioneering work and made some datasets available. Other Linked Data is appearing on data.gov.uk and there have been some demonstrations such as the work by the Environment Agency on bathing water. But the vital infrastructure – tools, standards, accepted authorities for core location data, vocabularies, best practice and knowledge – is still not in the mainstream. There is undoubtedly a need for geography in the Linked Data world – it will be filled by crowd-sourced resources like GeoNames¹⁸ if more authoritative sources do not come forward.

The Linked Data bandwagon is rolling and does not seem likely stop. The government’s agenda on transparency is adding to the momentum. As an industry we need to understand that it switches the focus from geometry to things, and it enables linkages not previously thought possible, despite the dangers of linking data from disparate sources. Linked Data opens up data sharing and re-use if some issues can be successfully addressed – none of which are unique to geography:

- The “not invented here” syndrome which discourages data sharing and re-use
- Uncertainties over the quality of some Linked Data
- The rapidly evolving nature of the technology
- Uncertainties over the long-term sustainability of the links
- Licencing
- Privacy issues raised by “mashing-up” otherwise separate datasets.

Footnotes

- 1 See for example: <http://www.w3.org/TR/2008/NOTE-cooluris-20081203/#semweb> for a much fuller discussion.
- 2 See: <http://data.ordnancesurvey.co.uk/ontology/spatialrelations/>.
- 3 DBpedia extracts structured content from Wikipedia. It allows users to query relationships and properties associated with Wikipedia resources. This includes links to other related datasets. It is an important node in the “Web of Data”.
- 4 GeoNames is a database available for download free of charge under a creative commons licence. It contains over 10 million geographical names

and is accessible via a number of webservice.

- 5 See: <http://www.cabinetoffice.gov.uk/resource-library/designing-uri-sets-uk-public-sector>
- 6 See: http://location.defra.gov.uk/wp-content/uploads/2010/04/Designing_URI_Sets_for_Location-Ver0.5.pdf
- 7 See: <http://www.w3.org/2004/02/skos/vocabs>
- 8 See: <http://www.foaf-project.org/>
- 9 See for example: <http://www.ida.liu.se/~janma/SemWeb/Slides/ontologies1.pdf>
- 10 See: <http://4store.org/>
- 11 See: <http://www.openrdf.org/>
- 12 See: <http://www.talis.com/platform/>
- 13 See: <http://marbles.sourceforge.net/>
- 14 See: <http://www.opengeospatial.org/projects/groups/geosparqlswg> and <http://geosparql.appspot.com/> for some examples.
- 15 See: http://www.dfn.org/images/uploads/guides/Getting-Started-with-Linked-Data-Environment-Agency-BathingWater-Pilot_1.pdf
- 16 See: <http://www.dfn.org/>
- 17 See: <http://location.defra.gov.uk/>
- 18 See the current clustering around GeoNames on the Linking Open Data Cloud Diagram: <http://richard.cyganiak.de/2007/10/lod/>



As an industry we need to understand that it switches the focus from geometry to things. . .



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IN OUR LAST EDITION we interviewed Vanessa Lawrence, director general of Ordnance Survey, and she said that she was most proud of two achievements in her ten years as the head of our national mapping agency. One was OS MasterMap and the other was the move to the brilliant (in several senses of the word) new headquarters building in Southampton.

Having been to the new building for the first time, I can see why she is proud of that. As a long time OS data consultant I also know why she is proud of OS MasterMap. But I hope that she will add a third achievement when we interview her next.

their information was needed but why it was not instantly available – FREE, on all our desktops!

Their response was somewhat ponderous, not least because of their business models, which had evolved over a century or more. As a Trading Fund, Ordnance Survey was relatively independent but totally dependent on the IPR in its maps and data. It was – perhaps still is – haunted by its experience of the ‘Geddes axe’ in the 1920s. (It was the last Liberal prime minister, Lloyd George, who oversaw those cuts).

However, it was a lunchtime meeting between a Labour prime minister, Gordon Brown, and Sir Tim

The licencing revolution

Free data, much shorter licences – and lots more opportunities? **Robin Waters** reports on the launch of the second phase of Ordnance Survey’s new licencing regime.

That would be the complete revolution in OS pricing and licensing that has been achieved over the last two years. Some would say this was driven more by recent technical innovation and government policies than by Ordnance Survey. But that would be unfair. OS is a government agency – however much the Treasury would have liked to privatise it. As a Trading Fund, and in times of relative prosperity, it was able to fund its own developments – not least OS MasterMap – and still paid a dividend back to the Treasury. This was government policy to which Vanessa committed when she took the job in 2000.

Trends and transformation There were few commentators at the beginning of this century who predicted the step changes in web services, geospatial data availability, and access to public sector information that have completely transformed the environment in which national mapping agencies now function. Arguably, more ubiquitous broad band access, the continuous trend to cheaper and more powerful IT systems and even, perhaps, ‘the cloud’ have been evolutionary and incremental. But Google Earth started a revolution in 2005. Not only free access to, literally, the world of maps and imagery; but also an interactive user experience that made most GIS interfaces obsolescent overnight. Now every primary school child and chief executive in the country has seen *useful* maps and imagery on their PC screen. Suddenly the Ordnance Surveys of this world were not having to explain why

Berners Lee, father of the world wide web, that catalysed the UK government’s change of heart on information policy. At the end of 2009 the prime minister announced that some Ordnance Survey information would be made available free of charge and with no restriction on its use.

During the last few months of the Labour government there was a flurry of activity – the setting up of data.gov.uk and a short consultation on what information should be made available from Ordnance Survey. In April, OS OpenData was announced and it was agreed in principle that there would be a centrally funded arrangement to replace the pan-government agreement and make further OS data more easily available to the whole of the public sector. At the same time there was a lot of pressure on the organisation to simplify – if not remove – the very complex licensing regime that had grown up since digital mapping came into widespread use.

If anything, the new coalition government increased the emphasis on opening up government data and the pace of change has continued. In October 2010 Phase 1 of a new licensing regime was unveiled and on 1st March 2011 Phase 2 was announced.

This is radical stuff. The previous regime was, according to **James Brayshaw**, director of sales and market development, based on protecting IPR “as required by OPSI” and was “initially conceived as a straightforward and logical model” with prices set at “market value”. Perhaps the words Treasury, Trading



Suddenly the Ordnance Surveys of this world were not having to explain why their information was needed but why it was not instantly available, FREE...



Fund and Topsy might also have been appropriate!
 Now, in the words of **James Cutler**, CEO of emapsite – one of Ordnance Survey’s most important partners: “These far-reaching changes are fabulous news for customers who want added-value data provisioning services for project work and other activities”. James suggested that the new set of licences deliver greater choice, flexibility and simplicity with distribution terms for all datasets and no minimum royalties for two years (and none at all for developers).

Did you ever expect to see those words “Free at the point of use” in connection with OS mapping?

Real opportunities So much for the hype – what about reality? The nineteen different (repeat 19) Specific Use Licences for partners have been reduced to five. These are much more generic and enable partners to concentrate on their businesses and markets without having to worry about crossing ad-hoc artificial barriers created by the lawyers. The new licences are for Distribution; Navigation; Consumer Applications and Websites; Printed Products (remember those?); and View, Tracking and Scheduling. No doubt there will be some clarification needed but it is certain that the new licences are also much, much shorter than their predecessors. Of course many products are now available, free of charge, under OS OpenData and partners can also exploit the OS OpenSpace Pro API web service.

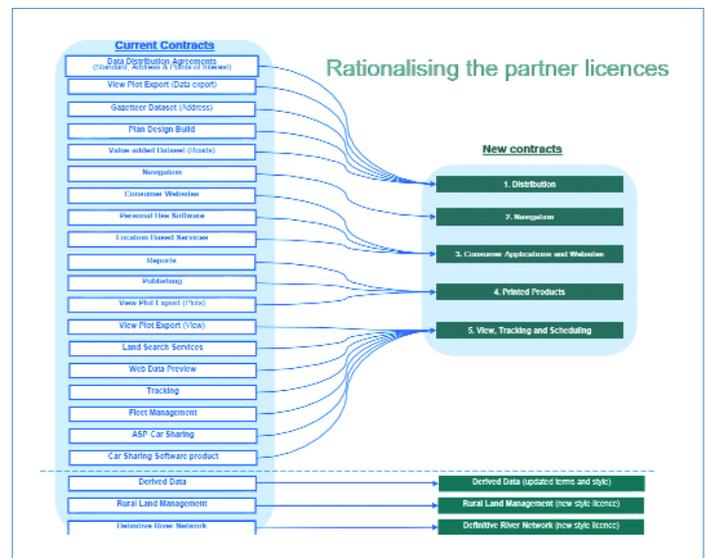
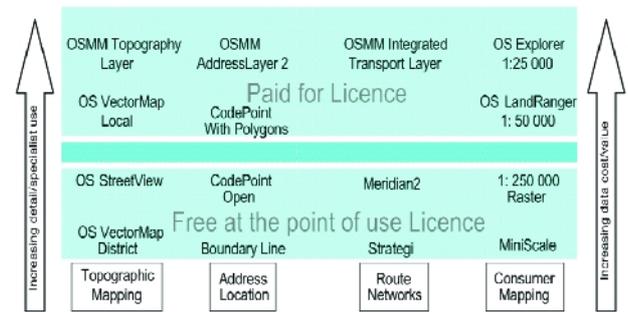
Many partners deal with public sector customers that are now covered by the Public Sector Mapping Agreement and they should also have a simpler regime for using Ordnance Survey datasets. The licences enable contractors to use datasets supplied under PSMA (in fact they may be required to do so) and in some cases to hold datasets for multiple clients and provide data management services as well. Opportunities for partners should increase because the PSMA will give hundreds of new organisations free access to Ordnance Survey datasets. These include all parish and equivalent councils, schools (public or private) and search and rescue responders.

Interestingly, in such a volatile economic climate, the PSMA is a ten-year deal funded by DCLG and should enable all of the public sector to use and share datasets – an obvious need that has previously been surrounded with mystery and mistrust – but which implements a main requirement for the UK Location Programme and the INSPIRE Directive.

Unresolved issues Are there any flies in the ointment? Probably no new ones, though there will no doubt be some issues arising as the new agreements and licences settle down. However, there some mosquitoes buzzing that could still sting the unwary. The “derived data” saga is set to continue although Ordnance Survey has published a much clearer explanation of its definition. It is not yet clear that councils, for example, will be able to put their information up on Google or Bing. There are also some unresolved issues around imagery (for which OS

There remain some mosquitoes buzzing to sting the unwary.

Ordnance Survey Licence model combines “Free at the point of use” and paid for data (Freemium model)



does not necessarily have all IPR) and the definitive rivers network (which is a very specialist product). And finally – at least it forms the last six pages of any relevant licence – there is Royal Mail and its new Postcode Address File (PAF) licence! This has been the subject of much criticism from Royal Mail’s own customers (hiking costs between 10% and 700% according to *Database Marketing* magazine). Perhaps the coalition should look again at this ‘public service’ with a royal warrant in view of the new government’s “right to data”. And we still have to see what the Public Data Corporation portends!

Peter ter Haar, OS’s director of products, commented, “We’ve received excellent feedback from our partner community since the launch of the new pricing and licensing model. Through opening up much of our product portfolio for partner distribution, we are seeing new opportunities open up for Ordnance Survey data.”

We don’t expect to see Ms Lawrence in a ‘coat of many licences’ but we do think she will look back on 2010 as a momentous year for OS. For those at the sharp end it is usually the content, quality and currency of geospatial information that is most important – if these licence changes mean that we have less reason to worry about legal issues then we are all winning.



... enable partners to concentrate on their businesses and markets without having to worry about crossing ad-hoc artificial barriers created by the lawyers.



INSPIRE JRC's key role

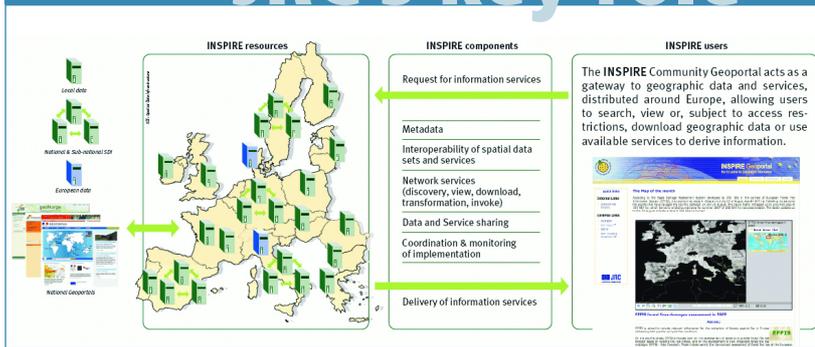


Figure 1. INSPIRE based on the Member States' infrastructures.

The INSPIRE conference takes place in Edinburgh this year and will be the first such event where real, publicly available results will be celebrated – near enough ten years after the first expert group was convened in Brussels. May 2011 is the deadline for INSPIRE Discovery Metadata Services to be available for each Member State. This article shows how this has been achieved with the leadership of the Joint Research Centre.

The Joint Research Centre (JRC) The Joint Research Centre is a research based policy support organisation and an integral part of the European Commission. JRC provides scientific advice and technical know-how supporting a wide range of EU policies. Its status as a Commission service, which guarantees independence from private or national interests, is crucial for pursuing

closely with the European and international standardisation bodies and with industrial consortia developing technical specifications. One example is its participation in the Group on Earth Observations (GEO), whose aim is to coordinate efforts to build a Global Earth Observation System of Systems, or GEOSS³. Staff from the unit co-chair the GEO Architecture and Data Committee (ADC) and the GEO User Interface Committee (UIC).

The Unit's remit is incorporated in JRC's multi-annual work programme 2007 to 2013 (www.jrc.ec.europa.eu/download/mawp3007-2013.pdf), which supports the Commission's Seventh Framework Programme (<http://ec.europa.eu/research/fp7/home-en.html>) for Research and Technological Development and Demonstration activities.

A Short History of INSPIRE Inspire is a joint initiative of three directorates general of the European Commission (DG Environment, EUROSTAT and JRC). Launched in September 2001 when the first Inspire Expert group was convened in Brussels, this group was composed of representatives of the Commission, the EEA and of nominated representatives of the Member States' environmental and geographic information communities. A number

JRC: many fathers but only one mother!

Alessandro Annoni provides a brief history of INSPIRE and explains how the EU's Joint Research Centre is managing Europe's spatial data infrastructure.

its mission. JRC has seven scientific institutes, located at five different sites in Belgium, Germany, Italy, the Netherlands and Spain, with a wide range of laboratories and unique research facilities.

The *Spatial Data Infrastructures (SDI) Unit*¹ is part of JRC's Institute for Environment and Sustainability based at Ispra near Lake Maggiore in northern Italy. Its mission is to coordinate the scientific and technical development of the INSPIRE Directive, support its implementation, and lead research for the next generation of environmental information infrastructures at European and Global levels. The SDI Unit is the largest group in Europe dedicated to SDI research and implementation in support of relevant EU policies. The highly qualified team of scientific and technical staff have competencies in geomatics, geodesy, environmental science, social science and computer science.

The SDI Unit also liaises with international initiatives and organisations to ensure that Inspire is well connected with similar infrastructures developed in different regions of the world and that it can make best use of satellite-based data collection (as foreseen in the Global Monitoring for Environment and Security, GMES, initiative and regulation)² and applications in the field of environmental monitoring. The Unit cooperates

of observers representing governmental bodies and NGOs were also invited to participate.

In December 2001, an Action Plan was published by the Commission. This was the reference document used to prepare for the proposal for legislative framework for the European SDI; for the creation of the necessary organisation; and to implement the overall action plan. Six working groups (with EC and MS representatives) were created for Common Reference Data and Metadata:

- Architecture and Standards
- Legal Aspects and Policy
- Funding
- Environmental Thematic User Needs
- Implementation Structures
- Impact Analysis

In July 2004, the Proposal for the Inspire Directive was adopted by the Commission. (<http://inspire.jrc.ec.europa.eu/proposal/EN.pdf>). This was a major milestone for the use of geographical information in Europe as a contribution to environmental policy and sustainable development. It was the first step in a co-decision procedure that led to the formal adoption of the Inspire Directive which is now being implemented in every EU Member State.



the Proposal for the Inspire Directive was... a major milestone for the use of geographical information in Europe...



After intensive informal discussions between the Council of Europe, the European Parliament and the Commission the final directive was agreed. Directive 2007/2/EC of the European Parliament and of the Council establishing an Infrastructure for Spatial Information in the European Community (INSPIRE) was published in the official Journal on the 25th April 2007 and entered into force on 15th May 2007.

Who's who? In 2002 Commissioners **Wallström**, **Solbes** and **Busquin** agreed a Memorandum of Understanding (MoU) on cooperation between DG Environment, Eurostat and JRC for the first steps in the development of the INSPIRE initiative. This MoU operated until the adoption of the Directive after which it was to be revised.

In 2006 the three DGs signed an updated MoU that outlines roles and responsibilities, working arrangements, and cooperation mechanisms until the end of the policy development phase in 2013. It was agreed that a key success factor for the implementation of the Directive would be the identification of durable and precise roles and responsibilities for each of the leading services, as well as of efficient and effective coordination mechanisms to ensure coherence throughout the Inspire implementation process. The three collaborating DGs also made a commitment to continued openness and transparency with respect to the different communities involved in the implementation of Inspire. The role of JRC is specified in this MoU:

*The JRC acts as the **overall technical co-ordinator** of INSPIRE. The JRC ensures the viability and evolution of the technical infrastructure for INSPIRE and guarantees the liaison with the European and international research community. JRC also initiates and monitors the work with international standardisation bodies for the purposes of INSPIRE and will be responsible for the technical coordination with other relevant international initiatives.*

Originally JRC was responsible for the preparation of the Inspire Implementing Rules for Metadata; Data specifications; Network services and interoperability; as well as for the development and upgrading of the European GeoPortal and for the technical coordination with other EU and international initiatives, including GMES (Global Monitoring for Environment and Security) and GEOSS (Global Earth Observation System of Systems).

However, the role of JRC has evolved and it is now responsible for other aspects of Inspire development and implementation including the management and coordination of communication with Spatial Data Interest Communities (SDIC) and Legally Mandated Organisations (LMO). From the beginning the Inspire team has engaged with the stakeholder community through an open process,

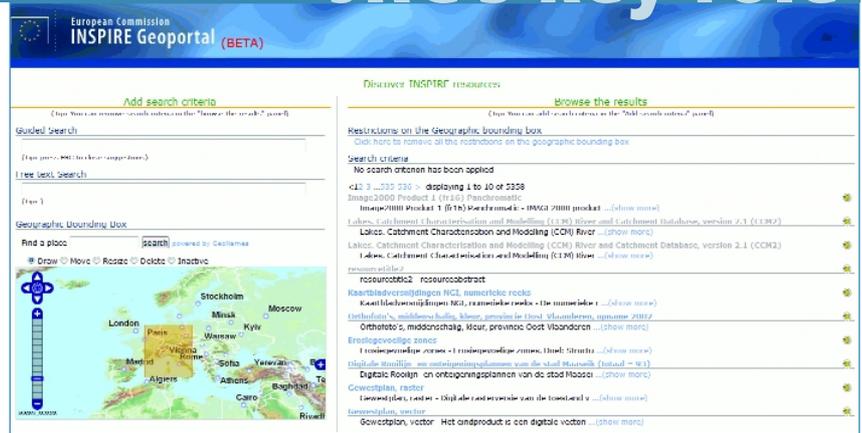


Figure 2: The INSPIRE Geo-portal user interface.

which enables them all to participate in every stage of the development of the Directive, from providing reference material to participating in the development of Implementing Rules and guidance documents. Registration as an SDIC or LMO is still open. (<http://inspire.jrc.ec.europa.eu/index.cfm/pageid/7/type/welcome>)

The JRC also facilitates the Initial Operating Capability Task Force (IOC TF) with the representatives responsible for the architectural design and the service implementation of their National Spatial Data Infrastructures. This Task Force will support the implementation of Inspire in the Member States. <http://inspire.jrc.ec.europa.eu/index.cfm/pageid/5/list/0>

Why JRC? The role of JRC in Inspire is in line with its mission to provide customer-driven scientific and technical support for the conception, development, implementation and monitoring of EU policies.

JRC played an important role in the conception phase of Inspire policy by conducting research and formulating policy options. Work had already started during the 5th Framework Programme for Research and Development (FP5). JRC's project "GI&GIS: Harmonisation and Interoperability" considered – for the first time – the equal importance of harmonising data (Geographic Information) while also facilitating the promotion of interoperable systems (Geographic Information Systems). The main goal was to "assist the creation of a European Geographic Information Infrastructure" by, for example, "providing technical expertise to the GI2000⁴ and similar initiatives for a European GI policy."

Through that project JRC fostered links between various networks: National Mapping Agencies (EuroGeographics), Research Laboratories (AGILE), National Associations (EUROGI), Industry (OpenGIS), Geodesists (EUREF), Standardisation bodies (ISO TC211, CEN TC287) and several other international organisations.

The project played an important role in preparing the ground for the establishment of Inspire by investigating and establishing some new European standards, developing technical guidelines and raising awareness within the European Commission and Member States. For example the Commission

JRC played an important role in the conception phase of Inspire policy by conducting research and formulating policy options.

INSPIRE JRC's key role

Interservice Committee for GI (COGI) was created in 1999 and formalised in 2001⁵.

JRC work has continued during FP6 and now in FP7. JRC launched the ESDI project to provide technical coordination for the Inspire initiative with the EC and MS, ensuring the technical coherence and exchange of information between the Inspire working groups.

Currently JRC is running two projects – SHAPE and ENABLE – that both contribute to Inspire but which focus on different parts of the policy cycle. SHAPE undertakes the scientific, technical, and organisational activities necessary for formulation of Inspire daughter legislation, i.e. the Inspire implementing rules for the interoperability of spatial datasets and services, and network services, as well as supporting the growth of the Inspire “broader community” through the evolving Inspire Forum.

INSPIRE Annex II and III Data Themes: Testing and Consultation:

INSPIRE specifies 34 key spatial data themes, organised in three Annexes to the Directive, which reflect different levels of harmonisation expected (right). For each of these themes it is necessary to agree on reference frameworks, classification systems and ontologies, data models, and schemas to which national data can be transformed or mapped. The methodology, the Generic Conceptual Model, and several tools have been developed for this transformation process.

Data specifications for Annex I themes have already been agreed. Hundreds of experts, organised into Thematic Working Groups, are developing the draft specifications for Annexes II and III.

About the author

Alessandro Annoni is Head of JRC's Spatial Data Infrastructures Unit, Institute for Environment and Sustainability. He has a degree in Physics from the University of Milan and worked in the private sector until 1996, managing companies specialising in GIS, earth observation and software development. He joined the JRC in 1997.

Annex I
Coordinate reference systems
Geographical grid systems
Geographical names
Administrative units
Addresses
Cadastral parcels
Transport networks
Hydrography
Protected sites
Annex II
Elevation
Land cover
Orthoimagery
Geology
Annex III
Statistical units
Buildings
Soil
Land use
Human health and safety
Utility and governmental services
Environmental monitoring facilities
Production and industrial facilities
Agricultural and aquaculture facilities
Population distribution and demography
Area management/restriction/regulation zones and reporting units
Natural risk zones
Atmospheric conditions
Meteorological geographical features
Oceanographic geographical features
Sea regions
Bio-geographical regions
Habitats and biotopes
Species distribution
Energy resources
Mineral resources

ENABLE carries out the activities necessary to support a coherent “implementation” of Inspire by helping the MS with the Inspire implementing rules on metadata and network services; and by developing the Community components of Inspire Architecture (e.g. geoportal, registries, etc.).

INSPIRE Status Implementation of the Directive is taking place over a ten-year period and during that time Inspire will evolve. Continuous monitoring and reporting are therefore necessary to establish progress and for decision-making. This is carried out under the four main regulations: metadata, spatial datasets and services, network services, and data sharing. Monitoring on a quantitative basis takes place annually and reports – covering more qualitative aspects – are required every three years. The reports and indicators for 2010 can be found on the Inspire website at <http://inspire.jrc.ec.europa.eu/index.cfm/pageid/182/list/indicators>

Conclusion 2011 marks ten years since Inspire was conceived, four years since the birth and two years since it was registered (transposed) in most Member States. Arguably there have been many ‘fathers’ of Inspire but, as in real life, there can only be one ‘mother’ – the JRC!

We believe that the Inspire Directive has already achieved much. It has involved experts and practitioners from all over Europe in a collaboration that will help to bring our geography together and enable wider access to thousands of datasets describing our territories. More details of this progress will be evident in Edinburgh at the end of June.

In fact, even before the first metadata publishing deadline, most participants would agree that they have been “inspired” and that the very processes of collaboration and negotiation – in each country as well as at the European level – have triggered many initiatives; raised awareness across the public sector; and encouraged individuals and organisations to *think* about their roles and the datasets for which they are responsible.

The INSPIRE Conference 2011 will be held in Edinburgh, 27 June – 1 July 2011. During the conference participants will be able to get up-to-date reports on the development and implementation of INSPIRE.

References

1. <http://ies.jrc.ec.europa.eu/SDI>
2. http://www.gmes.info/pages-principales/library/reference-documents/?no_cache=1&Hash=c15febbccd4b7635b5449cb3c266d8b2
3. <http://www.earthobservations.org/>
4. Draft COM of DG INFSO on “GI2000: Towards a European Policy Framework for Geographic Information”
5. COGI is now considered a permanent Committee attached to the Secretary General of the Commission.

interview e-learning for GIS



Julian Walters and Mark Selby and their CPD approved training.

AT NOTTINGHAMSHIRE COUNTY COUNCIL, **Julian Walters** leads a team of eight IT specialists, four of whom are GIS experts. They support the implementation of a number of GIS packages across the council and a collection of specific spatial applications. In 2009, Julian recognised the need to support the various GIS users with training to make

have to pick and choose who could get the training. Anyone needing the training could just be added to our licence. And it is also not just a case of being able to train more people but also of upgrading the skills of existing users.

How far was it possible to extend the training?

We have a limited number of licences for the ArcGIS software. Not everyone who undertook the training needed access to a licence all of the time. Users were able to use a licence whenever there was one available and those who job share were able to undertake the training when it suited them. On-line training presentations can be viewed by anyone at any time. All they need is the internet connection.

We also took advantage of the training being available anywhere with connection to the internet. A number of people followed the training while working from home and also when they couldn't travel into work due to the snow.

Did GIS247 enable you to provide more advanced training than would otherwise have been possible?

Investing in the e-learning approach Over the last year, the value of GIS has grown in profile at Nottinghamshire County Council with the help of GIS247 online training courses. In this interview, **Julian Walters** and **Mark Selby** explain how staff have benefitted from this self-paced e-learning approach.

the most out of the council's investment in the Esri ArcGIS software. GIS247 was chosen as a cost effective way of providing this training.

The initial licence ran for 12 months during which time the users had access to a large number of training courses and technical modules. These supported everyone from complete beginners to advanced and specialist users. This first year of access to specific ArcGIS training has proven to be extremely successful with a positive impact on the use of GIS across Nottinghamshire.

'The ultimate endorsement of the quality and usefulness of the GIS247 training has been to renew our licence,' says Walters. 'It is now viewed as such a strategic investment that we have moved to a central approach to fund our licence.'

GIS247 spoke to Julian and his colleague **Mark Selby** – a GIS system designer – about their experience of using this self-paced e-learning approach and the impact that it has made:

You have an "unlimited" licence to GIS247 so that any number of users can take part. Did this mean that you could extend training provision to more users than would otherwise have been possible?

Yes. The unlimited licence meant that we did not

Yes. We have adopted two key strategies. Firstly GIS247 enables us to get GIS knowledge to our colleagues throughout the council. It has provided a good foundation for potential users who become aware of spatial terminologies and techniques. They are now better able to ask for the right data or services for their particular responsibilities and the training has definitely raised the status of GIS throughout the organisation.

Secondly it has enabled a self-service approach to improving our colleagues' expertise. The use of GIS has been enhanced throughout the council – from straightforward data display and map production to simple analysis.

There are now many more questions such as 'How can I compare. . .' being asked and answered. One department is now able to look at drift in their pupil and school assignment data and can undertake trend analysis themselves.

Do you guide your users towards certain courses or allow them to choose?

When we began we made general suggestions but we then discovered that many individuals were just not using the on-line training until we put a bit of pressure on them. Once people started using it they realised it was a valuable resource and made the

“

This has freed up our GIS specialists time to concentrate on the more complex tasks...

”

interview e-learning for GIS



... GIS use has risen! It is moving from the periphery to the mainstream and becoming central to users business processes.



most of it.

Now that we have renewed our licence we intend to be more structured and there will be a training timetable. Employee Development Reviews will be used to set up a formal approach to the training. Each participant will have a learning plan with key milestones written in.

Will you use GIS247 functions that restrict access to certain courses for specific users?

We may look at these administration options, especially for creating groups of users and then restrict/allow access to certain courses and software versions. The admin options are certainly very useful for checking on what people have completed.

Can you detect a positive return on investment from the training?

Yes – in three distinct areas. Each department is now more capable and self confident. This has freed up our GIS specialists time to concentrate on the more complex tasks and on strategic development issues. Secondly, the costs of plot production by the IT/GIS team have decreased because different departments are able to provide plots and relevant PDF files themselves. Thirdly, it is very noticeable that the general level of expectation of GIS use has risen! It is moving from the periphery to the mainstream and becoming central to users business processes.

How would you describe GIS247 in terms of “value for money”?

Excellent. In the first year we have calculated that we had at least 400 hours of training across 44 different courses. If we had used traditional training courses we think it would have cost us £35k. GIS247 cost us about 10% of that – so the value is plain to see!

What were your arguments for securing funds to renew your licence?

Apart from the important flexibility we cited the difference between the cost of classroom training and the e-learning approach. Also the increased retention rate from spreading the training over several weeks instead of the traditional intensive three-day course. With GIS247 the trainee can pause to focus on a particular skill before moving on. The ability to spread out the training and tune it to your own work is also a key factor. Being able to work at your own pace is a real strength of the on-line training.

What do you think of the quality of the GIS247 training?

It is extremely high quality. Everything worked according to the specification, both in terms of the process as well as the content. The presentations are clear and thorough and it is great to be able to watch them as often as you wish.

How did your colleagues find the exercises?

The exercises are split into just the right size steps so that if you went wrong it was straightforward to redo a step. There are built in checks in the exercises without it being obvious so you do have to think for yourself. There is a good balance. You feel yourself learning as you go through the steps.

The courses have more content than other courses I have followed. You are presented with all the different ways of doing something and the different shortcut options. There are lots of useful tips of how to do things.

Are the AGI and GIS Certification Institute accreditations for CPD/GISP points of interest?

Yes, the accreditations are of interest for a number of reasons. For individuals, the gaining of CPD points is a useful motivator for their CV and professional status. The accreditations are also a type of confirmation of the quality of the course contents. However, it has been the GIS247 assessment process



Beginner to expert in just 12 months

Two years ago Rosie Gilbert had not even heard of GIS. During the initial GIS247 licence period, she took the opportunity to undertake training courses for ArcGIS. In just 12 months, Rosie has gone from a total beginner to being a competent and skilled user. She took several different training courses building up her skills and expertise. These courses ranged from the Beginners Guide to ArcGIS, through intermediate and advanced guides to Spatial Statistics & Analysis and Linear Referencing.

Rosie works in the strategic place planning and school admissions team – part of the Children, Families & Cultural Services department. Her role is to provide administrative support to senior planners and decision makers at the council. Before she undertook the training, her department depended on the central GIS team to fulfil their mapping needs. 'It took time to explain our exact requirements and we were limited in what we thought we could achieve. Now that I understand what can be done with ArcGIS I am able to prioritise our work and we can produce the maps ourselves.' says Rosie. 'These really improve the understanding of an issue and being able to do this for my department has had a tremendously beneficial effect' she adds. 'At the moment I have been looking at the drift of children towards certain schools in Lincolnshire and I am using some of the analysis capabilities of the software'.

interview e-learning for GIS



From left to right: **Debbie Soloman**, Business Development & Training Manager at GIS247, **Mark Selby** GIS System Designer at Nottinghamshire County Council, **Rosie Gilbert** Strategic Place Planning and School Admissions Team and **Mick Burrows** Chief Executive of Nottinghamshire County Council.

proven achievement and not just attendance. Our users have gained a lot of pride from not only completing a course but passing the course assessment with individuals achieving passes and distinctions.

Do you feel that the GIS247 courses have allowed you to develop your GIS skills further than might otherwise have been possible with the normal amount of GIS training that would have been made available to you?

Without the e-learning approach our provision of training would have been minimal. Budgeting for the licence is straightforward - a single fee and then we can get as much training as we need.

We have been able to increase the skills of our GIS specialists at no extra cost as well as open up training to other users. For example, Rosie Gilbert has done exceptionally well in the training and is making a real difference to the use of GIS in her department. Without access to GIS247, even though her department has an ArcGIS licence, Rosie would probably have not received any training at all.

itself that has been of most value.

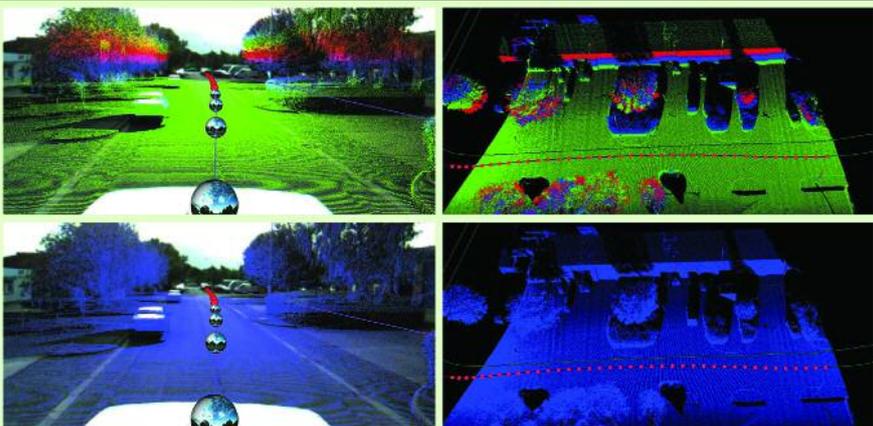
Why has the GIS247 Assessments been of most interest?

The value of the GIS247 assessment process is that if you pass, you gain a certificate. This is a certificate of

• *Article by Debbie Soloman, Business Development & Training Manager at GIS247. Debbie@GIS247.com or training@sological.co.uk*

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IN THE LAST ISSUE, I encouraged everyone going to Brussels to look in at the EC's Justus Lipsius building to see the exhibit for the Hungarian presidency – a 200 square metre carpet depicting the history and geography of their country. So, did I see it when I went to Brussels last month? No! It was a rushed visit and very busy – the only relaxation was a convivial bière blanche late in the evening! But now I read that the carpet has caused some controversy by using an 1848 map of Hungary when it was somewhat larger than it is today and encompassed parts of what are now Slovakia, Romania, Serbia and Croatia. A reminder of the tangled history of our continent.

some academic work. So far, so predictable!

But after the coffee break things livened up. My short presentation, at the behest of the Royal Institution of Chartered Surveyors, was on the availability or otherwise of local planning information in England and Wales. My pitch was, I think, a fairly common story of mixed format outputs; lack of central coordination – now being reduced further by the Localism Bill (?); and private sector companies trying to make up for this with various value added services. Landmark Information and FIND were my two prime examples.

However, I was sandwiched by two very strong

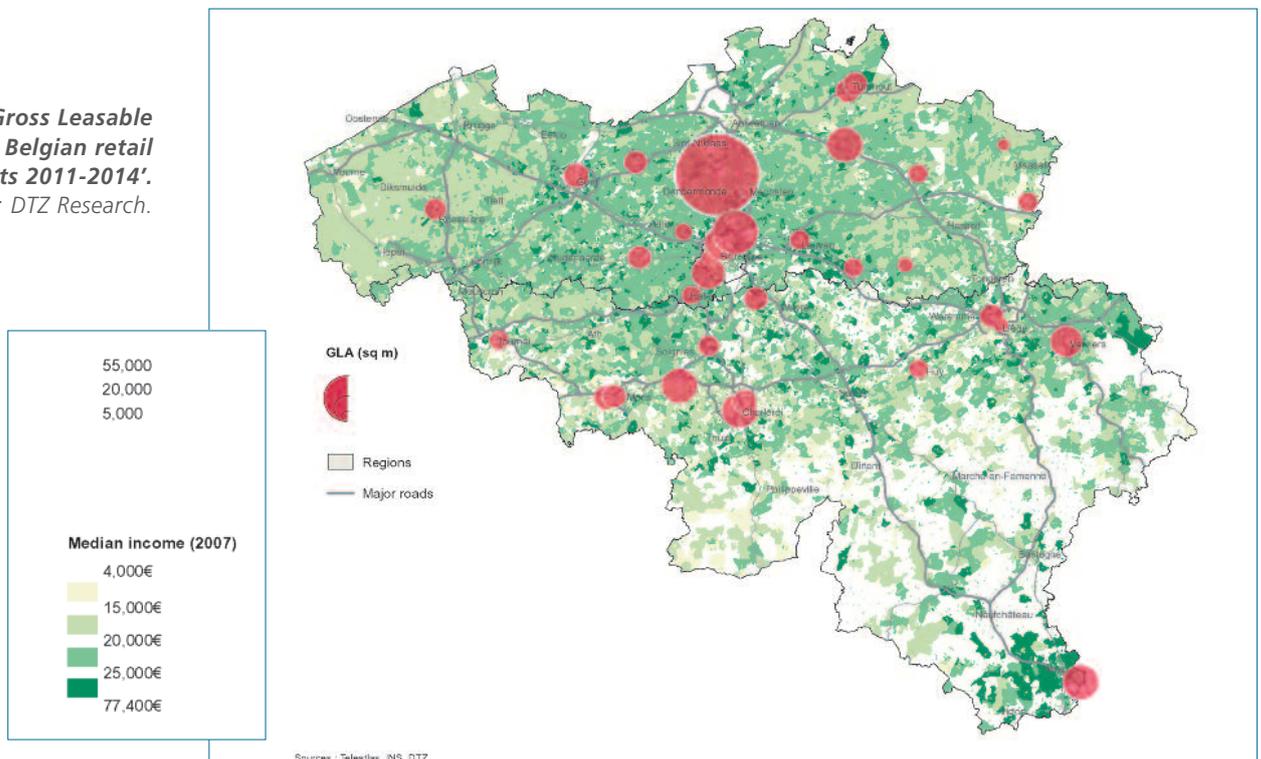
It's the data stupid!

How can the best decisions be made without the best data? From pricy topography to financial geography, passionate speakers in Brussels voiced a number of grievances. **Robin Waters** reports.

Planners & punchy messages The main reason for my visit to Brussels was to attend a workshop organised by the EC's Plan4All project, which is attempting to understand the different spatial planning systems across the EU. One of its main objectives is to contribute to the INSPIRE working groups on data specifications such as 'land use' and other planning related themes. The planners dominated the first half of the meeting with presentations on the data that they need (and how INSPIRE might make that easier), a case study from Poland, and reports on

presentations with very punchy messages. **Ronan Uhel**, a feisty Breton and Head of the Urban Environment Unit from the European Environment Agency, launched an attack on national mapping agencies for not being able to deliver pan European base topography for EC purposes at a price they could afford or with conditions they could accept. Now where have we heard that argument before? As a result they are either, using freely available information which is probably inferior, or they are commissioning their own datasets and therefore

Right: 'Gross Leasable Area for Belgian retail developments 2011-2014'.
Credit: DTZ Research.



duplicating what is already available. Before you ask, yes, he had heard of EuroGeographics but was not holding his breath for the advent of Inspire. Feisty and very relevant – but not new.

Angus McIntosh, on the other hand, was attacking the planners themselves for not understanding the economics of the property market. Angus is Head of Research at the property consultants King Sturge in London. His message was that 'financial geography' should be of much more concern to planners and that there was not enough flexibility built into developments, which could then become white elephants. He contrasted buildings from a century ago that may already have had three or four different uses (factories, offices, shops, flats) compared to single purpose buildings today that were impossible to convert – even if the planners gave permission! He believes there are many new buildings destined never to be used. He avoided politics however and I did feel a little sorry for the planners who are often being forced to draw up schemes for politicians who do not wish to be confused with the facts.

Mission: location The next morning, after the moules et frites and the bière blanche, I took metro and tram to the outskirts of Brussels – just across the Forêt de Soignes from

Waterloo. There I met a young man with a mission – to get property consultants using the geographic information that their 'location, location, location' mantra should have demanded many years ago. **Vincent Leroux** is the Head of Belgium Research and Global Head of Geomatics of DTZ and he too suggested that a lack of affordable international datasets was at the heart of his problem. In a globalised property world – with many British firms leading the way – parochial datasets in different formats, with different standards and licensed under different conditions are simply not fit for purpose. The map of retail developments in Belgium shows towns, the transport network, geodemographics and the gross leasable area for retail developments over the next three years. Until recently such maps were mostly outsourced; now they can be easily produced in-house – if the right data is available.

Public sector or private sector – we all live in the same geography and need easy access to the datasets that inform our long-term strategies and dictate our operational tactics. The tools for using those datasets are now available to everyone from the schoolroom to the boardroom; but the datasets are only beginning to trickle through and the best data is needed to make the best decisions. Whether it is the UK coalition's Cabinet Office or the Brussels bureaucrats – give us the data and we will do the job!

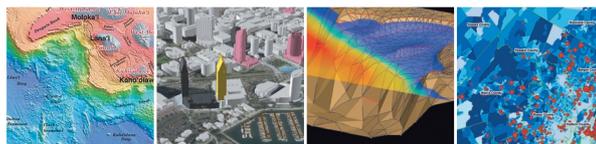
Robin Waters is an independent consultant who has worked extensively in several European countries and who has a keen interest in the EU's INSPIRE Directive and its implementation.

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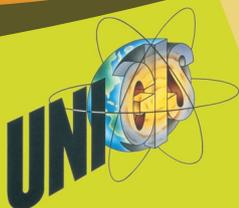
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modelling solar energy



IN THE UK, THERE IS GROWING interest from the public and private sectors in furthering a low carbon economy with government policies like the Climate Change Act

diffuse proportion rate of cloud cover.

A local authority can overlay local property information and specify the key parameters to customise the analysis to their individual requirements.

We were shown an example of analysis measuring the amount of direct sunlight over a one-year period. Lots of sun radiation doesn't necessarily mean you can generate a lot of energy of course. Colour-coded maps made it easy to pick out tilted or flat roofs for example – since the amount of solar energy generated depends greatly on the size of array panels that can be installed on a building's roof, this data could also give citizens a realistic idea of what they are getting for their money.

During our meeting, we were offered Nottingham City Council as a good example of Esri's energy data being used by a local authority for various applications. The council appointed Esri to develop an interactive energy map that would help reduce carbon emissions across the city – the aim is to reduce city-wide carbon emissions by 26 per cent by 2020 and to ensure that 20 per cent of Nottingham's energy requirements are met

Rising to a geographic challenge

The world is slowly preparing for a low carbon future. To drive it along there are many technologies. Smart meters, better insulation, renewables, solar, etc but to identify the best locations only GIS offers the right tools.

making carbon reduction a national priority. Meeting the goals of a low carbon future means hard work for both sectors but provides an opportunity for the GIS industry to grow recognition of the importance of location data and its critical role in reaching these targets. In March, *GIS Professional* was invited to see a preview demonstration of Esri's Solar Energy Planning Model, developed specifically for local authorities to help them deliver new revenue streams from solar energy.

Modelling at property level Esri believes that the move to a low carbon economy (an 80% reduction by 2050) is inherently a geographic challenge. At its heart it will require high quality data and analysis related to geography. Local distributed heat schemes, renewable energy schemes like wind turbines or micro generation schemes that feed in to the grid will all rely on geographical analysis for suitable locations.

In a presentation given by **Emily Martin**, GIS Consultant, Renewable Energy, we were shown how Esri's model uses powerful algorithms to process information from multiple data sources (such as a two-metre resolution digital surface model and Ordnance Survey MasterMap) to offer data at a property level – clear enough to pick up on areas of shade from individual buildings or trees, which could interfere with solar collection. A number of parameters can be put into the modelling tool, including: latitude and time of year for the effects of sun height and radiation received; View Shed, for the amount of sky visible; orientation and slope/tilt of buildings; as well as the

by renewable sources, by the same date.

In this case, the interactive GIS-driven energy map highlights opportunities like streets that will benefit from greater wall insulation and properties with south-facing roofs suitable for photo-voltaic panels, which can benefit from the Feed in Tariff mechanism. The company will develop two separate interfaces of the energy map, accessed via the council's intranet or the public website. Council planners, energy managers and local businesses will be able to query the data presented and perform analyses to support decision-making on energy generation and energy efficiency initiatives. The second interface will allow local citizens to check their properties on the map and help them make informed decisions about their own energy-saving needs. The mapping service combines the spatial analysis of the company's ArcGIS Server with the LocalView Fusion GIS for local authorities. When completed, the energy map will include around forty different datasets and employ digital surface and terrain modelling techniques to identify the height, volume and roof area of individual buildings.

Same data, many audiences After the presentation we spoke further with **Nick Jones**, business strategist for Esri UK, and **Andrew Keevil**, industry marketing manager. It became clear that Esri are also passionate about introducing its analytical solar energy service further afield. They believe that there is a great range

“
The . . . interface will allow local citizens to check their properties on the map and help them make informed decisions about their own energy-saving needs.”

”

of audiences for this offering, who all need the same high quality data but to be viewed for different uses. Eventually, the company hope to provide a macro picture of energy potential for supermarkets, hospitals, planners, banks, insurers etc. One example given was of a large property owner who wants to put forward a business case to bankers, it is expensive to get a survey to look at the whole property. Esri's data tool can help provide a focus on the best areas to look at. Alternatively, the tool could be used by supermarket chains to make better decisions on which branches should invest in solar energy – invest in a branch near a property estate identified as a low energy saver and perhaps surplus energy could be shared with nearby houses.

But what about the accuracy of the company's models, is two-metre resolution really good enough? There is a certain level of assumption, we were told, as looking from a distance does mean the potential to miss skylights or dormer windows etc. But this is a modelling tool that aims to help people save time and manpower – it's not foolproof. Local knowledge and the data tool need to be used in combination. Also, at the time of writing, Esri expect to successfully gain Buildings Research Establishment (BRE) accreditation for the Solar Energy Planning Model at the end of March.

But could all this data be misused? Perhaps a dodgy solar panel salesperson will twist the facts? A question that was acknowledged but our hosts concentrate on the need to adapt with customers – and how to market to new ones – now and in the future. The relationship with customers is changing with the growth of social tools like Twitter and Esri argue that consumer innovation is now moving in to business, rather than the other way around. We came away from the meeting with three further distinct points from the Esri team to ponder:

- *Young people are now moving on from IT literacy to being visually literate, with the help of technology like smartphones, etc they are seeing maps and understanding them more.*

For marketing to the public and outside our industry, maybe we need to stop using the term GIS – it sounds too techy. We need to sell differently, we need to think like we're offering an app – a tool to help get something done.

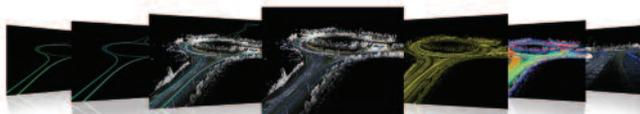
How do you monetise your products/services in a changing world? We believe it is important to identify those people with expertise in different fields and use that knowledge to provide high value in products.



... Esri expect to successfully gain Buildings Research Establishment (BRE) accreditation for the Solar Energy Planning Model...



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Chris Holcroft is Director and CEO of the AGI.

THE AGI COLUMN IS A MIXED BAG for this issue and for good reason; there is a lot going on across a broad spectrum of areas. Let's now step through just three of these in turn.

Public Data Corporation (PDC) At the time of writing, the Budget, just out, indicated pretty much what I'd anticipated in terms of the PDC. Beyond the initial announcement by Francis Maude, the PDC project team based within the Shareholder Executive and the Cabinet Office, have had to grapple with a complex and often contrasting range of factors and interests that are enmeshed in public sector data. Coming up with a public data policy and a structure for the Public Data Corporation (assuming it ever is called that – which I have my doubts about) is not something that can be created overnight and the outputs now expected in Autumn 2011 and Spring 2012 indicate that.

It is also worth remembering that whilst geographic information is a crucial part of public data and features in its effective use, many stakeholders in the Public Data

Professional Development (CPD), I knuckled down to go through the process myself to get a thoroughly personal perspective of what was involved. I found it one thing to tell people how to apply, what the criteria are and what the benefits may be from 'spec'; however, going through every stage of the process first-hand was invaluable in order to be able to share in the process from a true position of experience. What can I say? It was straight-forward enough if you stuck carefully to the application brief and took it seriously – as they say in the armed forces it's down to the "seven P's" ("Proper Planning & Preparation Prevents P*ss Poor Performance"). In other words, it makes sense to read the brief, take available advice (AGI is a great port-of-call for that) and have all your documentation in order. Being qualified and experienced is invaluable for your application, but a strong, well structured and valid application is essential.

I understand that providing a CPD record is not mandatory, but without doubt it helps. Those involved in the process as 'Assessors' generally recommend you supply one. Besides, maintaining a CPD record is vital to

Proving our vital place in the New Economy

Maintaining your CPD could be the differentiator when the spotlight is turned on your cost centre, argues **Chris Holcroft**. And what better way to stay on top of your personal CPD than to attend GeoCommunity '11?

Corporation come from well beyond the geographic information heartland and have equally valid interests to be considered. AGI provided a written response to the recent PDC 'evidence gathering exercise' and was also asked to facilitate two workshops at the Cabinet Office, which it was pleased to do.

Needless to say AGI remains closely interested and involved in all PDC developments and will keep AGI members posted. See the AGI response at:

<http://www.agi.org.uk/agi-news/2011/3/14/agi-response-to-pdc-evidence-gathering.html>

Chartered Geographer and the AGI In this era of proving our collective worth, vocational professionalism and a dedication to maintaining it can be a differentiator when the spot-light is being turned on your cost centre and its activities. Chartered Geographer (CGeog) is a world first and is recognised as an international professional qualification by the European Directive. Granted by the Royal Geographical Society (RGS), AGI has a close relationship with our colleagues at the RGS in assisting with the CGeog (GIS) category, which now accounts for around half of over 350 Chartered Geographers now registered.

After several years of promoting and speaking on the subject of Chartered Geographer and Continuing

maintaining your CGeog status once you have been granted it. Being in the habit of staying 'current' and recording your professional development is a good one.

This story has a point. AGI offers everyone, not just those engaged in the Chartered Geographer scheme, a low-cost way for recording, cross-checking and annually certifying CPD activity. If you think an independently-certified record of your year's activity is worth having for management and staff reviews then do contact us. We would be happy to help. For more information see:

<http://www.agi.org.uk/education-and-cpd/>

AGI GeoCommunity '11 This year's AGI Annual Conference – AGI GeoCommunity '11 – will be held in Nottingham on the 21 – 22 September 2011. The popular 'Ice Breaker' evening kicks off on the 20 September.

In the 5th year of the extremely popular AGI GeoCommunity format, we've left Stratford behind and shifted to a new, well appointed, centrally located conference venue – **East Midlands Conference Centre**.

We are pleased to have already welcomed a number of sponsors onboard including our Platinum Sponsors Esri UK and Ordnance Survey. On-line delegate bookings can also be made and already we have seen higher numbers than in previous years. The



AGI offers everyone... a low-cost way for recording, cross-checking and annually certifying CPD activity.



call for papers abstracts is now open. The deadline for submission of abstracts Wednesday 27 April 2011 and all content is uploaded on-line.

To deliver this event, a new Conference Committee has been established which will be chaired by **Jeremy Morley**, Deputy Director, Centre for Geospatial Science, University of Nottingham. As well as experienced hands, several new members have joined the committee, which is great to see.

The title for AGI GeoCommunity '11 is **'Placing Ourselves in the New Economy'**. Why? With so much social, political, economic and environmental change both at home and internationally, we can all probably agree that the geocommunity has much to offer. But how do we articulate that? How do we make a difference? How do our roles and responsibilities count in the bigger picture? How do we place ourselves within the new economic activity that is needed to grow the future UK national prosperity? How do we support efficiency savings? Which technology, data, standards and public policies can we exploit? How are we embracing social and environmental challenges facing us and finding answers? How can we help better serve the citizen? How does GI best practice best support effective decision making and accurate analysis? How can we convince decision makers? This September we will

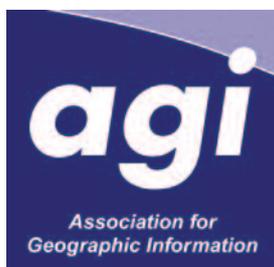
bring the geocommunity together to address these questions and others, to share experiences, and to express and prove our vital place in what is becoming a new economy.

AGI GeoCommunity '10 attracted 500 delegates. The residential format, introduced in 2007, is now well established and the event has proven its growth and sustainability. Feedback from last year's delegates indicated that 98% of those polled thought the event offered value for money and 90% felt it fulfilled their expectations. Over 90% stated that they would probably or definitely attend in 2011 and the same number gave voiced approval for the 2 day/2 day plus Icebreaker format now used. See:

<http://www.agigeocommunity.com> for all the details.



This September we will bring the geocommunity together to address these questions and others...



The AGI exists to "maximise the use of geographic information (GI) for the benefit of the citizen, good governance and commerce". Membership details are available from info@agi.org.uk or by calling: +44 (0)20 7036 0430

Placing Ourselves in the New Economy

21 to 22 Sept, EMCC Nottingham

(Ice breaker evening 20 Sept)

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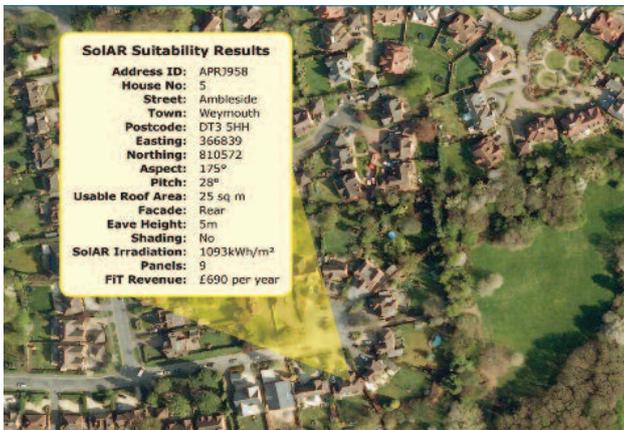
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Mapping the UK's solar potential

Bluesky is rolling out nationwide coverage of its Solar Suitability Map for the UK, which is designed to identify optimum properties for solar power. The solar maps calculate the usable roof space of each property. By using 3D aerial survey data and discarding features such as dormer windows, large skylights and chimneys, the maps provide an accurate indicator of the solar potential of individual roofs. The company has seen a growing demand for its solar mapping amongst local authorities, utilities and housing associations.

In addition, the company are offering a service to create detailed, bespoke 3D solar reports for individual complexes such as government buildings, schools, hospitals or commercial warehouses. All solar maps can be linked to existing address databases or mapping to select and target the best properties for solar energy generation.

Virtual training cuts costs A series of instructor-led virtual training courses for GIS professionals are currently running via an interactive classroom supported by fully-integrated audio conferencing. The courses run by Esri UK can accommodate up to 12 students, giving all delegates the opportunity to raise questions and queries with the trainer in real-time. The "hands-on" practical exercise sessions are facilitated through a cloud-based hosted lab environment loaded with the latest ArcGIS software. For more information, visit www.esriuk.com/training2/virtual_training.asp.

(<http://magicshop.cloudapp.net/>), an experimental service that automatically derives street vector data from the company's aerial imagery. Using the Azure Cloud platform to run code, the image-based road tracing service derives the position and curves of a road by specifying the end points. The company has also launched Spatial Data Services, adding a spatial search to its API (application programming interface) offering. The release offers the benefits of cloud hosting and distributed computing, allowing customers to upload data to its servers and perform spatial queries under the umbrella of their existing licence.

changes to public sector addressing and geographic data licensing. The Public Sector Mapping Agreement (PSMA) and National Address Gazetteer (NAG) 'present a huge opportunity for improved public services and reduced data procurement costs,' argues Phil Rothwell, sales and marketing director. 'But it's unrealistic to expect public sector bodies to know their licensing requirements inside and out, which is where Postcode Anywhere Advisory Services come in'. The service aims to help public sector organisations assess the most cost-effective way to fulfil their data licensing needs before acquiring the data. For more information, visit www.postcodeanywhere.co.uk/advisory.

Bing experiments with Road Detect Bing Maps has announced access to a test site for Microsoft Road Detect

Reducing data costs Postcode Anywhere has launched an advisory service in response to recent

BRIEFS

ArcGIS users can now access more cloud data formats, including Windows Azure, SQL Azure, OGD and Google Spreadsheets, with the latest release of Safe Software's FME technology, which extends the format reach of Esri's GIS system. Users can also transform point cloud datasets for downstream analysis with support for LiDAR formats LAS (multiple versions), Pointools POD and XYZ ASCII.

The latest release of GGP Systems' desktop GIS aims to help users to comply with the Inspire directive. The GIS allows users to submit information about their spatial data holdings to a publicly accessible,

Solar Assessment of Roofs

Solar is an intelligent geographic database containing every roof in England and Wales that is potentially suitable for the installation of solar panels. It contains a variety of information about each roof that determines its level of suitability, including usable roof area, pitch, aspect, height and irradiation values.

Applications

- Assisting environmental & energy targets
- Property suitability analysis
- Calculation of solar potential
- Calculation of return on investment
- Targeted marketing

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centrally maintained data catalogue. The GeoNetwork Opensource catalogue uses the Internet to enable access to geo-referenced databases, cartographic products and related metadata from various sources.

The Esri Redistricting service facilitates the creation and sharing of redistricting plans on a web-based platform. The service enables American state and local governments, advocacy groups and citizens to complete official, regulation-compliant plans and share them with stakeholders or the public. It is available as a "Software as a Service" on a subscription basis or a configured offering hosted and managed by Esri or deployed on premises.

Map Widget for ArcGIS is available for users of the IBM's (International Business Machines Corporation) Lotus Greenhouse and WebSphere Portal Business Solutions catalogue; the web 2.0 style catalogue delivers widgets, plug-ins, portlets and sample applications across the Lotus and WebSphere Portal software portfolio. The widget allows users to embed mapping and GIS capabilities in mash-up applications.

The Esri File Geodatabase API beta release is now available. The API allows developers to create applications that can interact with a file geodatabase without using ArcObjects so that applications can be run on computers that do not have an ArcObjects licence. To download, visit <http://resources.arcgis.com/content/geodatabases/10.0/file-gdb-api>.

Getmapping has announced a monthly account for its online "Planning Required" planning map service (www.planningrequired.com). Architects, home improvement companies and professionals who are regular users of the service can benefit from savings when they sign up for accounts.

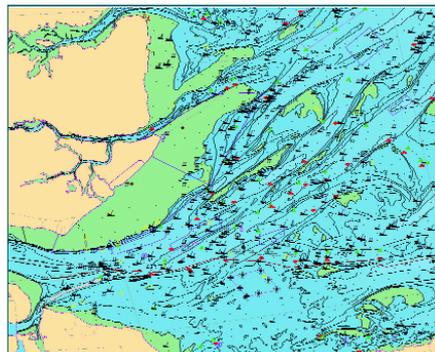
Erdas' ECW/JP2 SDK is a tool for software developers that enables rapid file handling in the applications

they create by including support for selected wavelet compression formats and protocols. Version 4.2 comes as three different editions with tool sets targeted for either desktop or server applications: desktop read-only, desktop read-write and server read-write.

In response to the Public Sector Mapping Agreement (PSMA) that began on 1 April 2011, Landmark Promap has developed a service to allow PSMA members access to the free Ordnance Survey data that is available through the agreement such as OS Mastermap and 1:25,000 scale mapping. Public sector organisations can access this data in three steps: check their eligibility and apply for PSMA membership; complete the registration form for member access via Promap; and then organisations will receive log-in details and a "how to use" guide. Once organisations have signed up to the agreement, they will be licensed to use the maps and associated data as part of their business. For more information, visit www.promap.co.uk.

Aligned Assets has released a corporate gazetteer for fire and rescue services. The Symphony Bluelight Gazetteer is compatible with the NLPG and the forthcoming National Address Gazetteer (NAG). The gazetteer will allow services to create additional fields to be stored against each NLPG/NAG record such as properties with thatched roofs, flood plain designations, colloquial property names.

The latest version of Avenza Systems'



Floodlight counters satellite shadow



Trimble's GeoExplorer 6000 series of hand-held devices deliver improved GNSS positioning for data collection in difficult environments, such as urban canyons and under tree canopy. The GNSS hand-helds use "Floodlight" satellite shadow reduction technology to increase the availability of position and boost accuracy in areas affected by satellite shadow.

mapmaking software, MAPublisher 8.4 for Adobe Illustrator, includes a thematic mapping feature called MAP Themes. The feature produces dot density maps and uses stylesheets to symbolise choropleth maps based on various types of data classification. This version also offers support for Adobe Illustrator files generated using Cartographica, a GIS for Mac OS produced by ClueTrust.

A recent government report, Geography: Learning to make a world of difference, has highlighted a decline in geography teaching in many of England's schools as pupils found the subject 'boring and irrelevant' and were left with confused 'mental images' of the world. Bluesky's education resources company, Wildgoose,

has designed 'Atlas Skills True or False', a set of double-sided cards to help pupils develop their atlas skills and knowledge of the world.

FIND has launched a new website (www.findfreemaps.co.uk), that makes it possible for members of the public to create and customise their own maps for free. Features of the "Personalise Your Map" portal include: a simple mapping toolset allowing the public to customise and create their own maps; ability to PDF your map in to a neat print template; seamless access to the Google API, OS Opendata and Openstreetmap on one website; simple access to a number of free UK government datasets; the ability to customise the map colours of Google Map.

Geostore offers marine data

Marine and coastal geospatial data can now be downloaded from Astrium GEO-Information Services' geostore (www.geostore.com). The data includes the Admiralty Raster Charts and vector data known as "Marine Themes", based on information sourced from the UK Hydrographic Office. The data is particularly relevant for environmental protection and planning professions in the public sector, as well as for commercial organisations that are planning offshore wind farms or other coastal projects.

Image: The Marine Themes product – © Crown Copyright, 2011

seminars | conferences | exhibitions | courses | events | workshops | symposiums

We welcome advance details of conferences, seminars, exhibitions and other events which are likely to be of interest to the GIS community. Please mention the name of the event, venue, date and point of contact for further information and send to Hayley Tear, *GISPro*, 2B North Road, Stevenage, Herts SG1 4AT Fax: +44 (0)1438 351989, e-mail: hayley@pvpubs.demon.co.uk

2011

GITA's 2011 Geospatial Solutions Conference
10-13 April, Grapevine (Dallas), Texas, USA.

More information:
www.gitaservices.org/websites/gita2011

Emergency Services Gazetteer Best Practice Day
11 May, Sheffield Hallam University, South Yorkshire, UK.

More information: www.aligned-assets.co.uk/events/GBPD_110511/gazetteer_best_practice_day.html

Esri UK Annual Conference 2011
16-17 May, London Hilton Metropole, London, UK.

More information:
<http://eukac.esriuk.com/>

The British Cartographic Society Annual Symposium
8-10 June, Shrigley Hall, Nr. Macclesfield, Cheshire UK.

More information:
www.cartography.org.uk

Third Open Source GIS Conference (OSGIS) 2011
21-22 June, University of Nottingham, UK.

More information: http://cgs.nottingham.ac.uk/~osgis11/os_home.html

INSPIRE Conference 2011
27 June – 1 July, Edinburgh, Scotland.

More information:
http://inspire.jrc.ec.europa.eu/events/conferences/inspire_2011/

Esri International User Conference 2011
11-15 July, San Diego Convention Center, CA, USA.

More information: www.esri.com/events/user-conference/index.html

11th International Conference on GeoComputation
20th – 22nd July, University College London, UK.

More information: <http://standard.cege.ucl.ac.uk/workshops/Geocomputation/index.html>

AGI GeoCommunity '11 – Placing Ourselves in the New Economy
20-22 September, East Midlands Conference Centre, Nottingham, UK.

More information: www.agi.org.uk/geocommunity/



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To reserve space in the next issue call Sharon Robson on 01438 352617 by 20 May 2011

RECRUITMENT

Hemisphere GPS

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Hemisphere GPS is looking for an experienced GNSS sales and marketing professional to establish and manage its European Survey & Mapping Dealer Network.

- The candidate will be responsible for direct sales initiatives such as signing on new dealers, conducting product demonstrations, leading product seminars, organizing dealer meetings and applying for Government tender contracts.
- The position requires regular travel throughout Europe and occasional travel in North America. The candidate would work remotely and report to the Hemisphere GPS European Distribution office in the Isle of Man.

Please contact: Andy Smith on +44 (0)1624 880366 or andy@saderet.co.uk.

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- No need to spend time compressing each tile using the appropriate compression technique for your GIS (compression makes the map smaller, faster and more responsive when you pan and zoom)



SPOT THE DIFFERENCE Boundaries

Originator's raw data includes boundaries that extend into the sea to incorporate islands etc.

MapMechanics processed data has pulled back the extension to the standard coastline to improve the clarity for map-based analysis.

Originator's raw data provides each individual polygon (area) as a separate object, so when you click on a district, you select only one part of that district.

MapMechanics processed data includes complex polygons joining all parts of an area together so when you select a district, all the islands that go with that district are highlighted – particularly important in areas with multiple islands, such as the Highlands of Scotland.

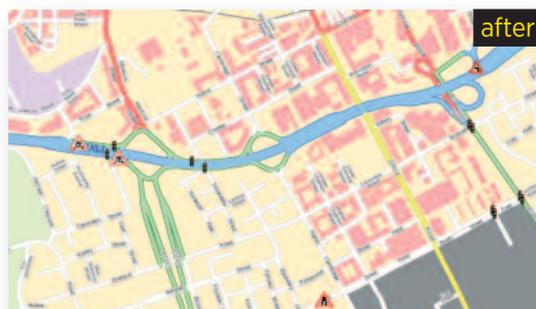
SPOT THE DIFFERENCE Vector maps

Originator's raw vector mapping includes little or no styling.

MapMechanics processed data is prepared by cartographers and zoom layered so, for example, street widths and labels are appropriate to priority and viewing scale. Symbols are provided and colours toned to ensure your additional data for analysis clearly stands out against the map backdrop.

Originator's raw UK mapping from international datasets does not segment roads by the classifications we are familiar with (motorways, A roads etc).

MapMechanics processed data classifies and colours roads in conventional categories for intuitive presentation and to enable users to easily switch on and off A roads or B roads, for example.



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