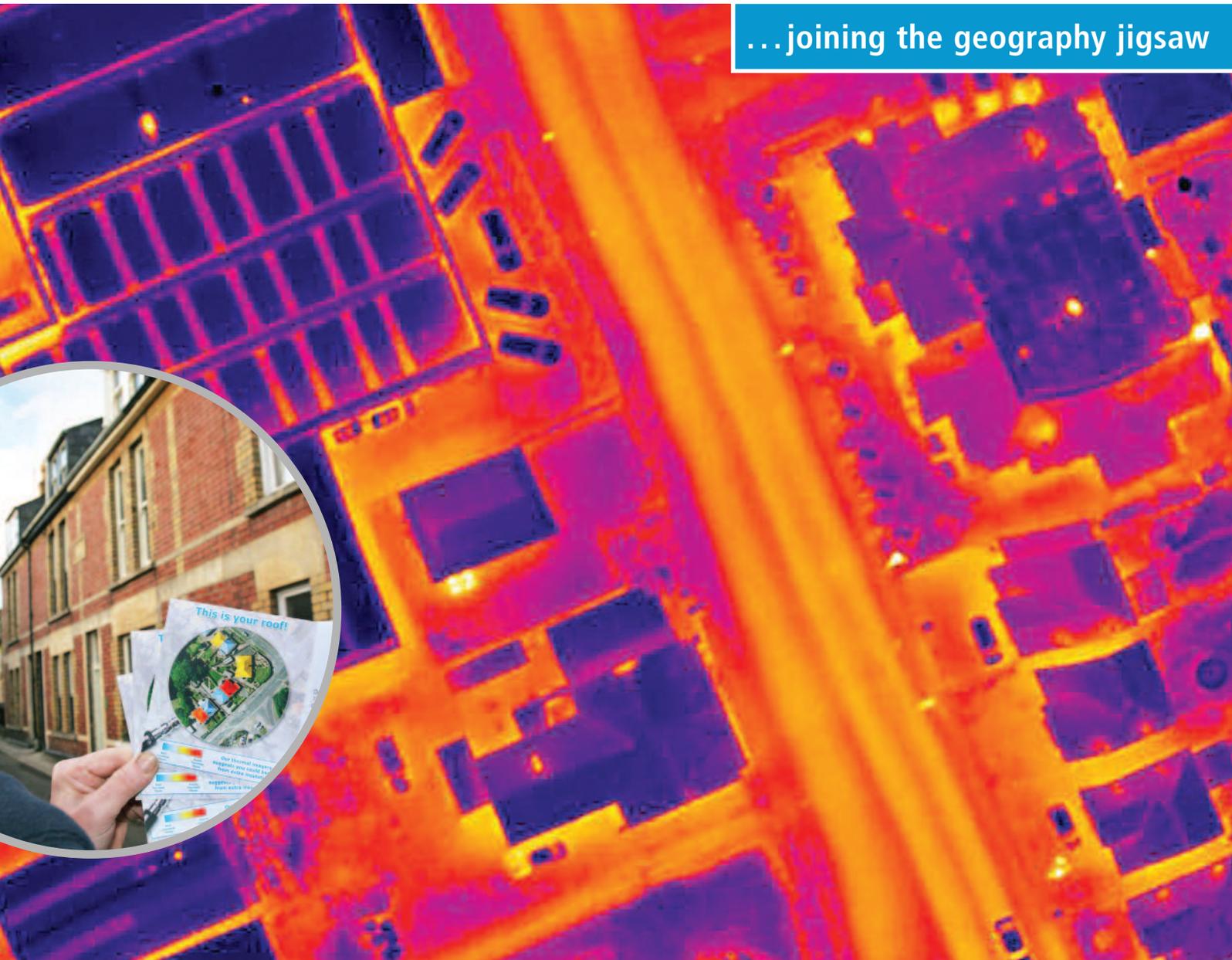


GIS

Professional

issue 45 : April 2012

...joining the geography jigsaw



Thermal imaging locates the poorly insulated

GIS and Donington Park motor racing circuit

Laser scanning grows up

The size of the UK location market in 2012

Lewisham (and others) map the way ahead

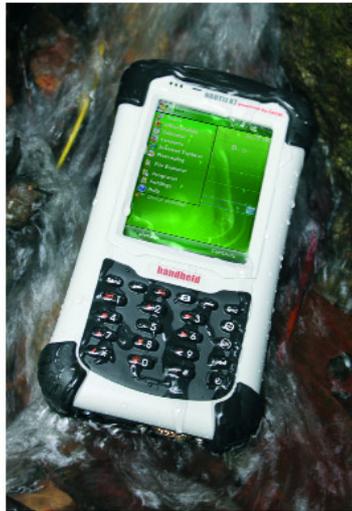
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 Robin Waters

Editorial and advertising:

PV Publications Ltd
 2B North Road
 Stevenage
 Hertfordshire SG1 4AT
 United Kingdom
 Tel: +44 (0) 1438 352617
 e-mail: editor@pvpubs.demon.co.uk
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Front cover: "This is your roof!" – Bluesky has launched a thermal mapping service that identifies energy inefficient houses and alerts the occupier with an easy to understand map. Read more on page 33.

Frontcover images are courtesy of Bluesky International Ltd.



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GIS goes motor racing!

Jeremy Murfitt explains why GIS was the obvious solution to help manage Donington Park's property and planning issues.



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Seminars mark busy GEO-12!

Richard Groom and Hayley Tear report on the highlights of two days of packed seminars at this year's number one GEO Event!



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A picture of the UK location market

A recent report on the size of the UK market for GI reveals several surprises – but is it worth buying? Stephen Booth reports.



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Does the UK lack interest in European GI affairs?

Professor Ian Masser explores the level of UK interest in the INSPIRE Directive against the perceived pan European activities of others.



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AddressBase: the definitive address database?

Experian QAS' Paul Malyon talks to Robin Waters about his experience with the latest database products from Ordnance Survey and GeoPlace.



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From wonder child to middle aged wisdom!

How is laser scanning faring against strict budgets and expectations? Dr Graham Hunter, 3D Laser Mapping, reviews the technology's progress.



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A gathering of UK location data providers

An AGI outreach event attracted participants eager to hear the latest progress on the UK Location programme, reports Graham Vowles.

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- p.09** **AGI EnvSIG Event** – Regeneration and the environment.
- p.22** **Case study** – Handhelds aid Latvian farmers' EU payments.
- p.30** **Case study** – Lewisham maps the way ahead.

> GISPro's COLUMNS

- p.13** **Adena Schutzberg** – Is crowdsourced map data inevitable?
- p.20** **Eurofile** – Coincidences, historical tales and a familiar addressing struggle!
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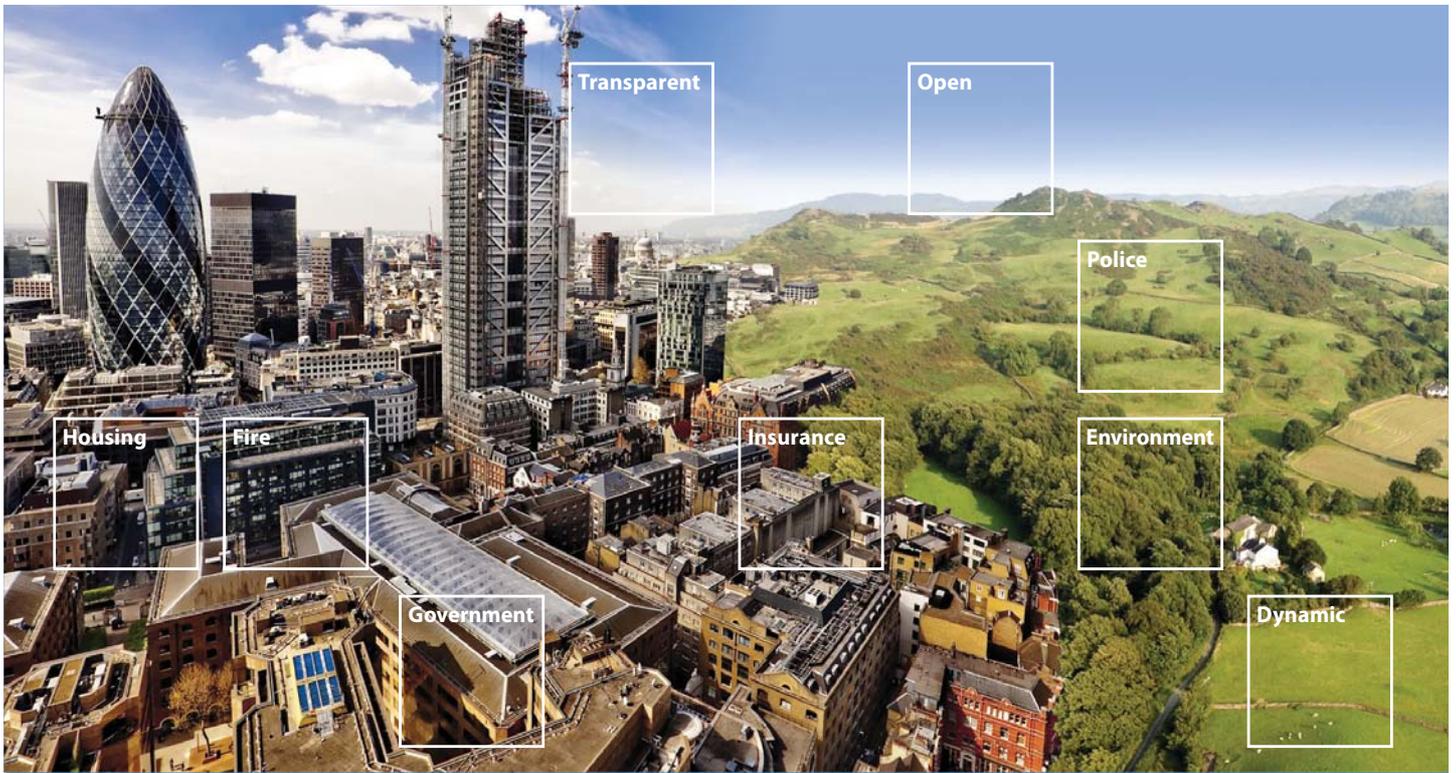
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welcome
to the April issue of *GIS Professional* . . .

Size, stereotypes and competition

This issue reveals some (not all) interesting research into the size of the UK location market. ConsultingWhere has updated its previous study of three years ago with entirely new and wider research to include several sectors not previously studied. The report pays close study if you're looking to grow your business over the next few years. For more, turn to *Assessing the size of the UK location market* page 16.

One area of business that definitely is growing rapidly across UK and the developed world is the migration of transactional business by consumers with suppliers to the Internet. Websites now quickly allow consumers to record their energy consumption, interact with their local council or log a complaint. The cost savings of doing this are substantial as our case study on MapThat reveals (page 30). One recent study estimated that, on average, face-to-face contacts cost councils £7.40 as compared to £2.90 by phone and only £0.32 online. It's obviously a no brainer to encourage this method of contact. Nevertheless, consumers will only have trust in these systems if their genuine issues and complaints are responded to. Too many such sites can become, quite literally, dead letterboxes amassing loads of unread emails.

Stereotypes about countries are almost always misleading and often downright untrue. Prof **Ian Masser** presents some interesting research about the registration of GI interests with the EU for the INSPIRE initiative (*Involvement of the UK GI community in Europe – page 18*). Given Britain's widely reported Eurosceptic attitudes and Germany's perceived slavish observance of all regulation, the study holds some surprises in store. Do not believe all you read in the red-top papers!

We work in a highly competitive sector. All players, from data suppliers to hardware manufacturers, from government agencies to industry-wide organisations are jostling to get an edge on competitors, expand or preserve their business. But it can lead to potential problems as lines get blurred and words traditionally the province of one part of the business leach into another. I am thinking of words like consultant, professional, qualified, accredited. . . In our little media business, which also runs exhibitions, we have faced competition from Institutions with trading arms supposedly regulated by the charity commissioners as well as commercial suppliers in the geo sector launching industry-wide events that compete directly with us. I can only imagine what you dear reader and advertiser would say if we were to launch a series of GIS software products or take on the sales agency for GPS handhelds. Until we do, you can read all about our latest event on page 14.

Finally, our interview with Experian's **Paul Malyon** (page 24) reveals once again just what a complex business addressing is. Ordnance Survey's AddressBase has the real potential, believes Malyon, to become a single address register that includes postal code boundaries as well as data from utilities and other business suppliers. He would even like to see a facility so local communities could feedback updates. Now what a good idea. As a by-product it would raise awareness of just how important address information is to a whole raft of users from not for profits, businesses to blue light services.

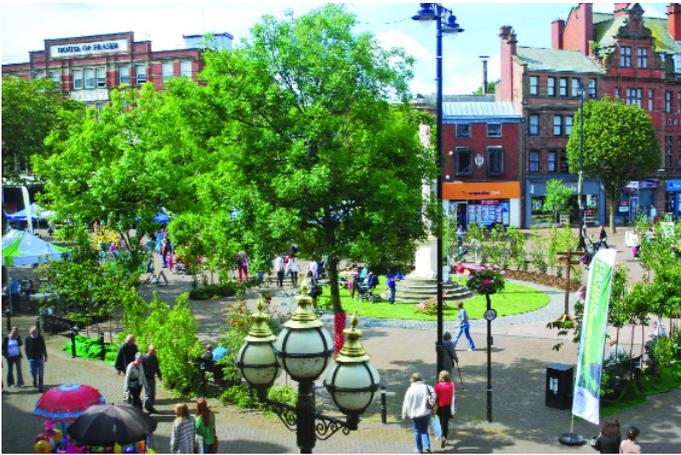
Stephen Booth, editor



. . . the real potential . . . to become a single address register that includes postal code boundaries as well as data from utilities and other business



Tree mapping aids green space strategy



A digital tree map layer is helping Carlisle City Council to develop a 'green strategy' to maximise the benefits of urban green spaces. Following the publication of *The Natural Choice*, a government white paper on the natural environment, the Council is using Bluesky's ProximiTREE data to map trees, highlight areas where new planting may be required, identify possible risks posed by trees and plan inspections.

The paper estimates a benefit of £300 per person a year by living within a view of green space. Such spaces are said to be worth £2.3 billion a year and can deliver £30 billion in health and welfare benefits; failing to maintain this resource could cost £20 billion each year.

ProximiTREE uses aerial photography so the exact location of every tree can be mapped and the height and extent of its canopy derived. The app is suitable for use in most desktop GIS, web mapping applications and CAD packages. Both 2D and 3D versions of the map are available and ProximiTREE works alongside existing Bluesky datasets such as 3D buildings, terrain models and aerial imagery.

Rapid response network

MapAction is to join a network of expert NGOs to be called on by Government in times of international crisis, such as famine, floods and earthquakes. The Rapid Response Fund will enable speedy mobilisation of life-saving support from Britain's best businesses and charities in the critical hours after a disaster strikes. MapAction has the unique role of gathering and distributing vital information to aid agencies on the ground, on frequently updated situation maps.

"Supplies, experts and vital aid are too often tied up with paperwork, rather than being deployed straight to the disaster zone," says International Development Secretary, **Andrew Mitchell**. The new facility allows organisations with experience in

disaster response to access funding within hours, thereby reaching affected people faster and saving more lives.

Meanwhile, MapAction volunteer **Naomi Morris** has bitten the bullet and will be running the London marathon this year to raise money for the charity. She's planning to do it dressed as a giant globe...donations to virginmoneygiving.com/NaomiMorris



OS launches professional accreditation

In a move that may leave professional organisations like RICS and RGS as well as AGI scratching their heads, Ordnance Survey has launched a professional accreditation programme. The move is aimed at creating a specialist network of GI experts who will work with the national mapping agency in supporting and providing technical advice to government, commercial and international customers. Two communities are envisaged: *accredited consultants* and *accredited technical specialists*.

The accredited consultants will be independent experts with a track record of providing external consultancy on strategic planning, design and implementation while the accredited technical specialists will be individuals with a track record of providing technical consultancy, including advice on OS data and services, to end-use customers within live operations environments – both government and commercial customers.

One industry expert who *GiSPro* talked to commented: "There is a contradiction inherent in this scheme between independence and not being able (who decides?) to criticise OS products and services. When I was asked about this possible scheme I made it very clear that an independent consultant must be free to critique OS stuff."

Meanwhile **Chris Holcroft**, director and CEO of the AGI, adds: "This is a very new Ordnance Survey announcement and my discussions suggest that not all the details of these consultancy and technical accreditation schemes are fully finalised at this point. Both schemes are intended to provide an urgently needed 'force-multiplier' in providing consultancy and technical support to users both in the UK (to the rapidly growing number of PSMA members, for example) and overseas. These schemes could therefore provide welcome new opportunities for the industry. Furthermore, and bear in mind the AGI operates a CPD scheme

and works in close collaboration with RGS on Chartered Geographer (GIS), I don't believe that these new accreditations are intended to challenge 'professional' qualifications from membership organisations, many of which are actively supported by Ordnance Survey.

James Brayshaw, OS director of sales and market development, confirms that "these experts will work with Ordnance Survey providing specialist advice and skills to all our markets. This could range from strategic government customers who access Ordnance Survey data via the Public Sector Mapping Agreement (PSMA), to new commercial companies looking to create innovative products using mapping data.

OS launches neighbourhood innovation challenge

Budding innovators and entrepreneurs are being asked to come up with ideas that could improve neighbourhoods and communities across Britain. A £115,000 prize fund is available to help develop the best entries. Ordnance Survey's GeoVation Challenge is looking for great geography, technology and design based ideas, which will deliver solutions to a variety of problems experienced in neighbourhoods and communities across the country. The ideas with the best use of OS products and services may win a slice of the prize fund.

The challenge is open to all including community groups, residents and local authorities and invites ideas that could potentially improve the quality of life and enhance community spirit. **Chris Parker**, one of the GeoVation organisers, adds: "This new challenge is really open to everyone. In communities across Britain we have residents who are heavily involved in local projects while others are far less active. However, the common theme is that we all experience local problems which we would like to see improved. In the current economic climate we are all being asked to do 'more for less' and 'do things differently'. The new challenge allows

anyone to submit an idea which could ultimately help deliver solutions in local neighbourhoods."

GeoPlace granted ISO 9001:2008 renewal GeoPlace has announced the full renewal of its ISO 9001:2008 certification for another three years following an external audit by Lloyds Register Quality Assurance (LRQA). The move confirms conformance to the 'Provision to the public and private sectors of information management and consultancy services, relating to address location identification and street information'.

LRQA stated that "The system has continued to mature and has remained effective in supporting achievement of the client's defined objectives and high levels of customer satisfaction, through a period of significant organisational change. The way in which this has been done will provide a good platform for future improvement".

GeoPlace MD **Richard Mason** comments: "It is very gratifying to receive this renewal during a period of rapid change. It comes on the back of a recent successful six monthly ISO 27001 surveillance audit on our Information Security System. Our approach of organically developing and integrating the components of our management systems has been acknowledged as a very practical and effective way for a small organisation to manage its business to high professional standards".

GeoPlace creates and maintains the National Address Gazetteer Database from which Ordnance Survey supplies the AddressBase range.

LPS and Esri Ireland to deliver Spatial NI Northern Ireland's Land and Property Services (LPS) recently awarded a contract through open tender to Esri Ireland to deliver the technical component of the Northern Ireland Spatial Data Infrastructure (SDI). The new system will incorporate a catalogue of Open Standards web services, a web-based Geportal and

interactive map viewing.

The immediate aim of Spatial NI is to meet the objectives of the EU Inspire Directive. In addition to forming an integral part of the Northern Ireland GI Strategy, which aims to make the province a spatially enabled society by 2019 – with government using GI as a decision making tool as well as businesses increasing efficiency and the public actively using GI on a daily basis.

Trevor Steenson, chief survey officer at Land & Property Services, remarks: "Spatial NI will provide a platform for the development of GI applications within and beyond Northern Ireland. This will stimulate demand for geographic information and underpin revenue generation opportunities for the private sector. It will assist in driving the use of geographic information across Northern Ireland in a structured, consistent manner".

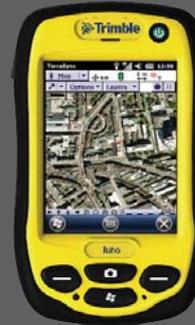
Anti-Piracy Exercise An anti-piracy exercise is being unveiled by an industry team led by Esri UK. It aims to demonstrate how, by joining up multiple sources of data and intelligence into a location-based common operational picture, faster and informed decisions can be made.

Esri believes that piracy has similar challenges to counter insurgency operations in Afghanistan. The aim is to identify, track, intercept and disrupt a highly mobile and increasingly organised network. "Almost all data has a location and time so it can be plotted geographically. By bringing it together in a visual context, patterns and relationships can be seen, which might not be immediately apparent from analysing each intelligence source in isolation," said **Nick Rigby**, non-executive director, Esri UK. "It is this collaborative approach that can help joint forces focus their limited resources and counter the piracy threat far more effectively."

Councils to share website and mapping West Oxfordshire District Council (WODC) and Cotswold District Council (CDC)

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have entered into a 'Shared Service' agreement with Astun Technology. The councils already have a number of shared working arrangements in place, including several joint senior manager posts. From 2012 they will start developing a single IT service with one of the first projects being the two council websites and internal map based data and asset management tools using Astun's iShare data integration and publishing platform.

iShare is designed to provide public access to information via a council's website and is in use with over thirty local authorities in England and Wales. It uses a citizen's address held in the Local Land and Property Gazetteer (LLPG) to pull information from a council's numerous service delivery systems and presents it in a single view. Citizens can also carry out 'my nearest' searches on local facilities and services, report faults, receive alerts and much more. iShare also works internally helping different council departments share data and includes an intelligent mapping facility.

Flying unit relocates

Ordnance Survey's Flying Unit will relocate to East Midlands Airport with two aircraft, where it will be based for the next three years. The aircraft will be using it as a base to capture high-quality aerial imagery from the highlands of Scotland to the south coast. The mapping agency uses the aerial imagery to update the master map of the country, which records over 5,000 changes every day. The two aircraft, a Cessna 402 and Cessna 404, carry cameras which record change at a highly detailed level and are equipped with high resolution cameras that capture 196 megapixels on each image. Over the course of the 2011 flying season, the cameras captured over 51,000 useable frames including those covering all the Olympic sites and 140 other target areas.

AGI announces GeoCommunity 2012 The Association for Geographic Information has announced a raft of

ideas they hope speakers will address at their annual conference. Scheduled for 18th - 20th September 2012 at the East Midlands Conference Centre, Nottingham, topics suggested to help shape the agenda include: *Infrastructure and Networks; Open; Humanitarian; Business Intelligence; Big Data; Business Models; Visualisation/Cartography; Sharing Best Practice; Localism and Citizen Engagement; Energy & Resources.* The organisers stress that the topic ideas suggested are not meant to form a 'straitjacket' so feel free to submit a paper on a subject not listed. The deadline for submissions, which should be submitted electronically, is 25 April 2012.

In further news on GeoCommunity, the conference 'fringe' will provide an opportunity for delegates to pitch their GI "top tens". If you are interested in giving a short top ten presentation please contact the conference team. More at <http://www.agi.org.uk/call-for-papers-2012>.

BRIEFS

Ordnance Survey reports the 2000th member of the Public Sector Mapping Agreement (PSMA) just nine months after it was launched. Tatenhill Parish Council in East Staffordshire will use digital geographic data for improved planning and services.

Blom ASA (Blom) is divesting its subsidiary BlomInfo A/S to the Danish engineering and consulting company NIRAS A/S for DKK 19.4m. After completion Blom may receive up to an additional DKK 4.5m as further repayment of the working capital in BlomInfo A/S.

Esri UK has announced its annual conference will be at Wembley Stadium on Tuesday 15th May, 2012. The one-day event will showcase innovative approaches to solving a variety of complex organisational and business challenges through the use of ArcGIS software.

PEOPLE

Managing asset collection



Leica Geosystems' **Nathan Ward** has been appointed as market segment manager for the asset collection & management market segment for the UK & Ireland. As a chartered surveyor having worked for the company for over 11 years and with almost 20 years experience in the surveying and mapping industry, Nathan will be focusing on expanding the overall business in this segment as well as the Leica Zeno GIS series of products.

GeoPlace's Head of Systems



Radha Chandrasekaran has been appointed head of systems for GeoPlace LLP. She will have a key role in the development of the National Street Gazetteer (NSG) and the National Address Gazetteer Database from which AddressBase products from Ordnance Survey are produced. Her responsibilities include overall management of the GeoPlace IT development team and its outputs, the management of all GeoPlace's address and street data hubs together with the coordination and management of internal and external web applications. Crucially, she will work closely with the National Land and Property (NLP), the NSG and National Address Gazetteer Database Custodians to enhance the services provided by GeoPlace to local authorities.

New MD at Aligned Assets



Aligned Assets has announced the appointment of **Andy Hird** as their new MD. Now in his tenth year with the company, Andy started as Professional Services Manager, adding the Software Development portfolio in 2009. Andy gained a degree in Geography from Middlesex University in 1997 and subsequently spent over five years working at a large local authority, joining Aligned Assets in 2003. He has been responsible for bringing the consultancy, support, development and testing teams together into one department, which has seen a higher level of integrated working, the result of which has been a far greater responsiveness to customer requirements.

Technical team expands

GGP Systems has made three new appointments to its technical services team. **Phil Donachie**, an experienced IT professional joins as senior implementation and support consultant while **Matthew Allwood** and **Anttoni Stojmenov** have both been appointed as developers. Donachie joins from Morrison Facilities Services, a subsidiary of the Anglian Water Group while Dr Matthew Allwood joins GGP's development team from the Defence Science and Technology Laboratory. Anttoni Stojmenov previously worked on projects to develop an identity card recognition system for telecomms companies, developed document management software and helped design and implement a client booking module and resource management system for a travel agency.

Regeneration and the Environment

The AGI Environmental Special Interest Group's annual conference attracted attendees from diverse backgrounds but sharing a common interest in environmental regeneration and how GI can benefit projects.

THE ANNUAL CONFERENCE of the AGI's Environmental Special Interest Group (AGI EnvSIG) was held at The Gallery (Alan Baxter Associates LLP) in London on 8 March. The conference attracted participants from a diverse background, but with a shared interest in the field of environmental regeneration.

Supporting creativity Key note speaker **Tim Stoner**, Space Syntax, set the scene for the conference with a presentation asking "What is the City for?". Tim, an internationally recognised expert in the design of spatial layouts, looked at the fundamental role of space and the role of GI to support creativity in the field of urban planning. Case studies from the UK and beyond were used to demonstrate the active use of spatial analysis in regenerating cities.

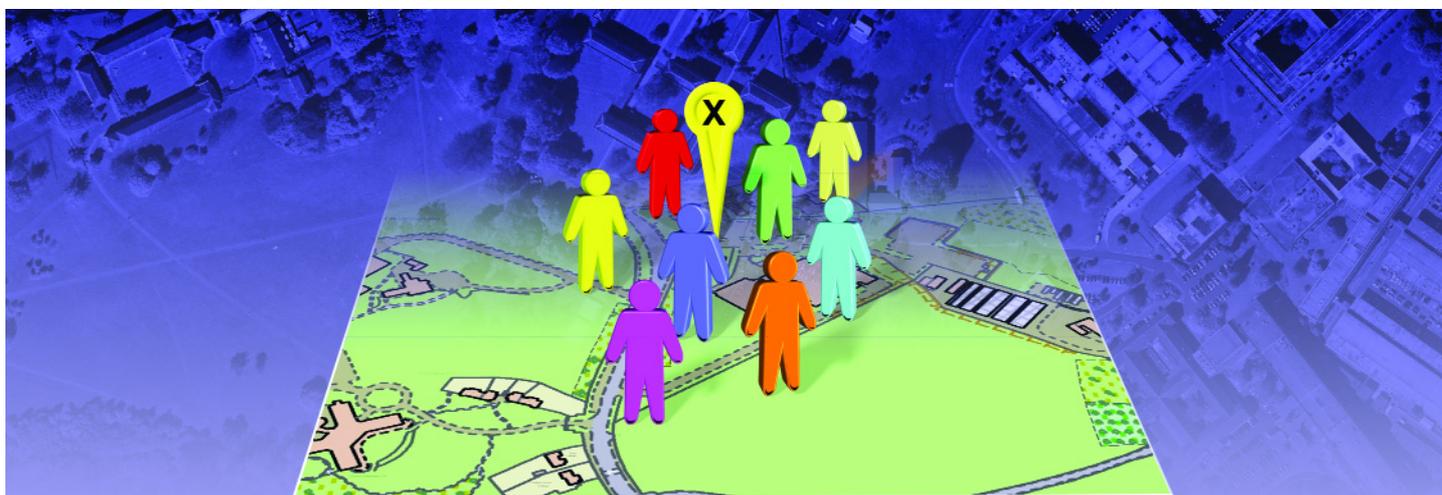
During the day, participants heard from a range of speakers from across the public and private sector, all involved in GI-enabled regeneration projects. This included online technology such as the Home and Communities Agency demonstrating the Spatial Intelligence Geographic Network (SIGnet), and Bristol City Council's "Know Your Place" portal. The Mersey Forest presented their award-winning work in developing a Valuation Analysis Toolkit for use in Green Infrastructure strategies and the British

Geological Survey described their use of GIS for regenerating and conserving stone built heritage.

A break-out session invoked an active discussion about further developing spatial technology with both communities and within the design professions. The feedback from this session will be collated and available shortly from the AGI EnvSIG website.

Taking lessons forward The final presentation for the day from **Simon Woody** of Buro Happold focused on the use of GIS in the Olympic Park development and the key lessons that could be taken forward for future regeneration projects. The presentation was particularly fitting in 2012 and in addition to the lessons learned, participants commented that the London 2012 project has led to some notable improvements in GI management processes implemented by both public and private organisations.

The AGI EnvSIG would like to thank all of the speakers and participants of the event for contributions towards an engaging programme and successful event. We would also like to especially thank the event sponsor Scysis. Presentations from the day and further details about the group, including future events, are available via our webpage: <http://www.agi.org.uk/environmental/>.



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case study: Donington Park

The Donington Park Story



Figure 1: British Grand Prix 1937.

DONINGTON PARK is one of the oldest motor racing circuits in the UK – racing started in 1931. It was the “mecca” for grand prix racing and saw the arrival of the German teams with the Mercedes and Auto Union cars, which dominated the sport in the late 30s (Fig 1). It was an army depot during the war but reverted to a race track and was bought by **Tom Wheatcroft** in 1971. It thrived for over thirty years culminating in being awarded the British Formula 1 event for 2012. However, the site operators were not able to secure funding and the business went into administration with the site reverting to the Wheatcroft family.

In early 2011 Jeremy Murfitt was appointed to deal with property and planning matters but had to start from scratch. The administrators had seized all of the contents of the site offices. Nothing was left, no

client who would purchase a single user licence and train one individual to operate the software. The project started with Esri ArGIS 9.3 but with an expectation that the final version should move to 10.0. This would of course require some retraining and support during a critical implementation phase.

The Initial Property Terrier The terrier was to include all owned property, tenants and occupiers, building information, listed buildings, planning records, tree preservation orders, SSSI's, rights of way, helicopter landing pads, and car parks. Ordnance Survey MasterMap and aerial imagery were acquired, geo-databases set up and within a couple of weeks a “base” system was up and running.

At this point, Jeremy realised his need for further application training and hadn't considered online

GIS goes motor racing! Over the past year, **Jeremy Murfitt** has implemented a GIS for managing Donington Park Race Circuit. GIS was the obvious solution – a compact site with no existing asset data. The technology has proved vital for big events, coexistence with the international airport next door and for bringing the circuit out of administration and back to profitability. But there was a lot to learn! He was supported throughout by access to e-learning and technical guidance from GIS247.

paper work, maps, plans, nothing. Luckily, the estate manager had a separate office with some of the relevant documentation.

The only maps and plans available were hard copies showing ownership, leases and contracts, planning permissions, utilities and drawings of building details and site surveys. There was quite a pile of maps and plans varying in size, quality and scale.

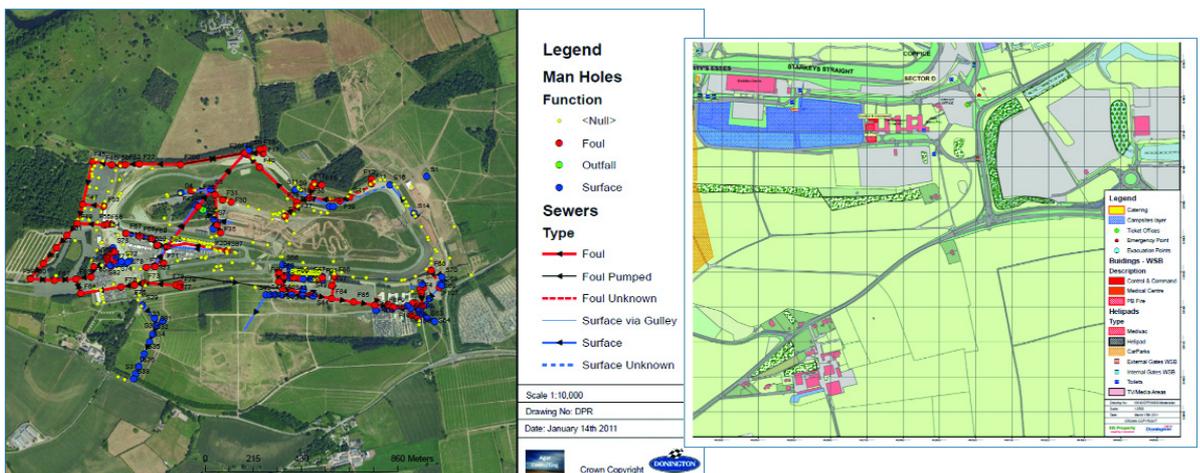
Jeremy proposed a GIS solution to organise all of the information concentrating on building a property database initially and thereafter to include services. Once complete this would be transferred to the

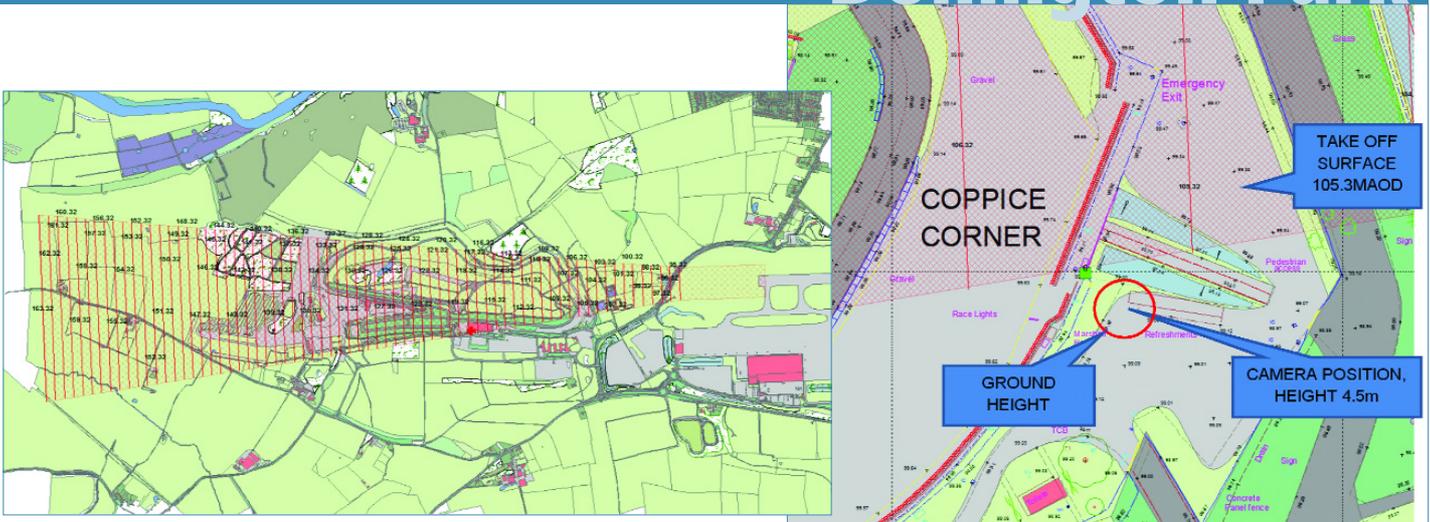
training until he discovered GIS247. He decided to start from the beginning of the course and work through all of the modules. These are broken down into logical sections and can be taken as a whole or as individual components. An immediate benefit was finding better ways of using the software and finding shortcuts or simpler options which all improved efficiency.

Site Services The next phase of implementation was capturing the services to and within the property. There were some CAD surveys, most recently from 2008 and these contained useful, but “unintelligent”

Right: Figure 2 – Donington Foul and Surface Drainage.

Far right: Figure 3 – An extract from the World Super Bikes Masterplan.





data. This included manholes and inspection chambers (location but not use), power lines, water supplies, hydrants, data lines, telecomms infrastructure, water mains, surface and foul drainage.

Two geo-databases were created – one for water supply and drainage and the second for electrics & telecomms. Populating these was more complex requiring many hours on site identifying and categorising all of the features. The estate manager's local knowledge was critical and, from a large number of A0 drawings, a service plan was pieced together (see Fig 2).

By now the benefits of the GIS were becoming obvious – the management team could visualise all the information and financial justification was evident. Presentation with the GIS in meetings makes best use of attendee's time and enables everyone to see and use the same information. This was particularly useful when discussing issues relating to site services – this was the first time that comprehensive plans of the whole site were available.

The first big event of the 2011 season was the British Superbikes Championship at the end of March. For such major events, the circuit is required to have an event management plan covering everything from waste management to lost property. Interested parties include all the blue light services, East Midland Airport and the race organisers. This was another opportunity to use the GIS – at previous events these key participants had never had access to the same information at the same time or in such consistently mapped form. The list of locations to be captured included: external and internal gates, ticket offices, medical points, marshals' stations, CCTVs, loud speakers, large screen TVs, satellite uplinks, temporary mobile telephone masts, camera locations, tower lights, and lots of campsite details. These were organised into three geo-databases: Event Data, Track Data and Health & Safety information.

The flexibility for fast display enabled the various interested parties to speed up decision making, hard copy plans were produced on the fly. Previously this

required a third party CAD provider to recreate plans offline over a few days. A simple local grid was added and seemed to be welcomed. However, it soon transpired that the police and fire services immediately revert to national grid in an emergency and they were delighted to watch the OS Grid appear at the flick of a switch! See Fig 3.

Planes Donington Park lies at the western end of East Midlands Airport (EMA) and the end of the runway is only 800m from the site boundary. A standard airport safety procedure requires determination of the minimum take-off and landing slopes. These are different with take-off slopes being less steep than the landing glide path. Although the theoretical slopes are set for the worst case (fully loaded take off on one engine) any structure along the line of the runway must not protrude above this surface. The airport provided CAD drawings for these slopes and these were used to create polygons and lines in the GIS for the circuit. See fig 4.

All structures on the site were already coordinated and their heights above ground known. From the site survey there were also ground levels so the clearance between any structure and the take-off surface could be calculated. However, a problem arises when cameras are mounted on movable access platforms – these are up to 45 metres high! Any protrusions would have to be notified to the authorities and could result in restrictions on flying from the airport. This could prove costly to the circuit!

People The final element of the planning process related to people. The GIS enabled easy visualisation of where people would be located during the event. This is needed to obtain a motor racing licence from the Federation Internationale de l'Automobile (FIA). Their inspector visited the track two weeks before the event to confirm and agree all details about the track including all safety aspects and where all personnel would be located during the event – marshals, doctors, ambulance crews, emergency response bikes,

Above Left: Figure 4 – The East Midlands Airport (EMA) Take Off Surface.

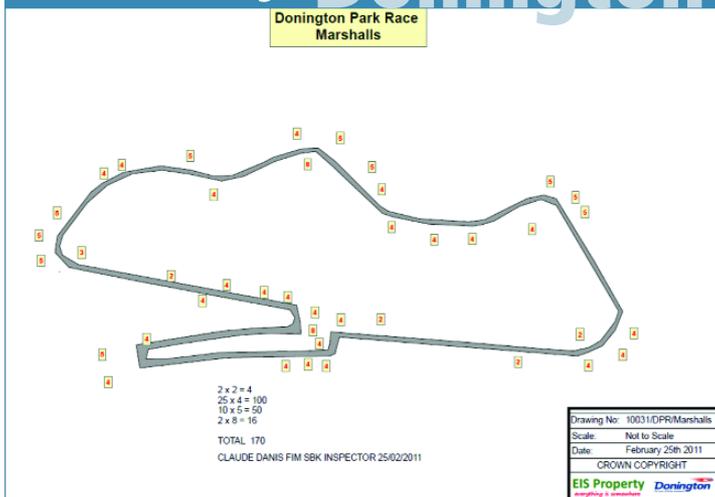
Above: Figure 5 – Determining the Clearance Heights.



By now the benefits of the GIS were becoming obvious – the management team could visualise all the information and financial justification was evident.



case study: Donington Park



Above: Figure 6 – The Marshals positions for race day.

security, gate and ticketing teams etc.

The inspection takes place over a day and plans were provided the previous week for all these locations with suitable symbols. The inspector did make a number of changes to these locations which were instantly updated using drag and drop. Revised plans were quickly produced, printed and signed off. These were simple circuit outlines with appropriate symbols but no base data. See Fig 6.

With the big event over it was an opportune time to upgrade to ArcGIS 10 and the GIS247 service were there to help. Purchasing and using new software can be a bit like a new toy at Christmas! Open it; glance at the manual and then just start playing! In this case an easy download from Esri and away you go. Using the application before embarking on formal training can be useful anyway. Prior knowledge helps to get the best out of the training. Jeremy confirms this; he used GIS247 to work through the modules for version 10 with the aim of completing all three levels of training. He then spent some time and effort tidying up datasets for the various applications and entering some Metadata. GIS247 particularly stress the importance of keeping datasets well structured and organised.

Jeremy is an experienced GIS user and deals

mainly with property based information. Datasets are therefore relatively static and there is little need to work with complex mapping or with scripts. However, Jeremy wants to be able to “present clients with simple and functional applications that will enable them to use the data themselves”. He is looking at various options including using Arc Publisher along with Arc Reader. Online projects are also of interest and he knows that GIS247 will be ready to help.

What next? At the circuit there will be improvements to the data including a new survey of the water mains and of the miles of electric and data cabling. More excitingly there are discussions about the real time mapping of vehicles using the track to help with noise modelling and collating data on spectators to assist with traffic management. It sounds like Christmas may be coming round again?!

Final thoughts Jeremy believes that GIS is going to achieve a much higher profile in commerce and business – it has yet to filter down from the public sector and the large corporations. Google Earth/Maps and many other websites have raised the profile of mapping. However, there is a knowledge gap for many people between what can be achieved with Google Maps (for example) and that of full GIS applications such as ArcGIS or MapInfo.

He believes however that large-scale mapping prices (typified by OS MasterMap) are a deterrent to many potential GIS users. Some clients believe it is prohibitive and this is particularly true for rural areas where recent price changes have resulted in 20% hikes for some users. Similarly, although the latest ArcMap 10 from Esri has been a significant release and he would not now wish to go back to the previous version, he cannot justify the cost of some of the extensions which he would like to use for some clients.

Jeremy will also continue to use GIS247 to further his knowledge and skills with the benefit that he has the flexibility to use the online training as needed.



Jeremy (right) won the GIS247 competition for users' stories and was awarded the iPad 2 prize by Steve Soloman, GIS Co-ordinator, GIS247. The picture shows the prize presentation in the motor museum at Donington Park Race Circuit.

About the Author

Jeremy Murfitt is a Chartered Surveyor with over 20 years experience and has always had an interest in mapping. His company EiS Property provides advice on property, planning and providing GIS solutions with clients including Donington Park, Breedon Aggregates and Sandcliffe.

About GIS247

GIS247 is a comprehensive e-training solution for GIS users, with full courses and instructional technical modules that support GIS projects worldwide. Its internet-based solution provides valuable tools for all users whether they are new to GIS or seasoned professionals. GIS247 is one of the many solutions offered to the GIS community by Sological Solutions.



Adena Schutzberg is Principal of ABS Consulting Group Inc. and Executive Editor of Directions Magazine, www.directionsmag.com

To answer the title question, let's start with a bit of history. OpenStreetMap (OSM) is synonymous with "crowdsourced map of the world." The goal of the project, founded in 2004, is nothing less than a freely useable map created by the people of the world.

Crowdsourcing mile stones While OSM was drumming up new contributors to enhance its map over the last 12 years, several crowdsourcing map milestones occurred. TomTom began to realise that its average user could provide valuable data updates. The company had formal relationships with various fleets for data gathering, but now any of its users could contribute. TomTom launched MapShare, software that ran on its satnav devices, in 2007. With it, users could easily capture and then upload errors found while on the roads. MapShare was far more elegant than the browser based error reporting system originally dubbed Map Insight.

Slowly, beginning in 2008, Google's Map Maker project for creating and editing its map data moved from less developed areas, which were just barely

A change of direction? Do all these moves suggest an inevitability that most online or map app providers will offer at least the option of a crowdsourced map? What is pushing organisations in that direction?

Cost/Complexity: Licensing commercial data is costly. And, it's complex. I suspect any large player that knocks on TomTom or Nokia's door for data requires many discussions with lawyers before the crafting of a one-off contract.

Lack of Control: Google and others who provide data via APIs have quite a lot of control over the look and feel of those data. In addition, map data/map data service providers can, like Google has always suggested, add advertising to the "free" version. Or they might, as Google recently did, begin to charge for those who use a lot of data and/or bandwidth.

Data Production Costs: The data providers (TomTom, Nokia, Google, etc.) know well the cost of creating new and updating old data. If even some

Is crowdsourced map data inevitable? Many of the industry leaders are offering crowdsourced mapping options. But is this data adequate yet for web mapping and app developers, asks **Adena Schutzberg**?



Google own maps are so valuable now that the company recently gave the World Bank control over which countries can use that data for. . . response to natural and other emergencies.



mapped, to well-mapped areas including the United States. In 2009, Google made the then startling announcement that it would cease using commercial geodata for certain parts of the world and begin to build its own datasets. The new data would come from public data and from its users. Google's own maps are so valuable now that the company recently gave the World Bank control over which countries can use that data for preparation and response to natural and other emergencies.

Companies that were not ready to fully embrace crowdsourced datasets added them as an option for users. I noticed this first on one of the oldest mashups sites I still use nearly every week: Gmap-pedometer.com. Users of this route creation tool can draw their running or biking routes on top of Google's data or OSM. The first significant corporate site to add an OSM option was MapQuest with its MapQuest Open program. Today, Esri offers OSM as an optional basemap on ArcGIS Online.

The move to crowdsourcing has not been restricted to western countries and portals. In March 2012 Yandex.Maps, the mapping corner of one of Russia's Internet portals, added Public Map, a crowdsourced effort, to its commercial basemaps. If the commercial data is not available for an area, the crowdsourced Public Map is rendered. If both are available, users can select which to use.

fraction of that work can be done for free, there is a cost savings. The labour of committed users is essentially free. Google has gone as far as "gamifying" Map Maker via contests and special positions for its best civilian evangelists. OSM has stated it has no plans to gamify its project.

Coolness: In 2012, it's hip to be open. When Foursquare announced it was moving off of Google's Map API for its website maps (but not its mobile apps) it specifically noted its belief in open data. Esri has been working hard to associate its brand with all meanings of open including "open data," "open source," "open APIs" and "open standards." Crowdsourced data, while not necessarily open, certainly supports an open feeling.

Are those factors enough? At this point they are enough to push map providers to offer a crowdsourced basemap as an option. They are not, however, enough to push most app/website authors to the exclusive use of a crowdsourced dataset. Why not? The confidence in the crowdsourced maps (whether real or perceived) is not high enough. . . yet. But, as confidence in the data and processes behind these crowdsourced maps grows, I do think we'll see them appearing in more and more websites and apps.

GEO-12 report



IF GEO-12 IS A MEASURE of the geospatial industry, then the future is looking brighter! Every exhibition stand was taken; there were no vacant seats at the gala dinner and, over the two days over 500 people came through the doors of the Holiday Inn Elstree. And as in previous years, there were two full days of invariably standing-room-only seminars.

Out of the box and into the air With growing applications for mapping in support of infrastructure projects, as well as being a vital tool in conflict regions, unmanned aerial vehicles (UAVs) were given their own seminar slot to look at how this technology has flown centre recently.

Delegates heard from **Maarten Vandenbroucke** of Gatewing, who offer the rapid mapping X100 fully autonomous aircraft. Founded in 2008, the company has a worldwide dealership and offer certified training of their system to clients. Vandenbroucke highlighted

camera has attracted much attention from many sectors – particularly forensics. The camera now incorporates GPS to facilitate georeferencing of images and Spheron's Sceneworks Framework Server software aids collaboration between colleagues in dispersed teams.

Geo-enabling asset management **Steven Eglinton**, MD at GeoEnable, argued that the GIS components of an enterprise information management system are now often just part of business-wide processes and that GIS professionals should consider customer requirements before technical aspects. Eglinton previously worked as GIS manager at Tubelines, the asset management company selected by UK government to regenerate several London Underground lines. The contract was performance-based and involved 207 miles of track, 251 trains, 100 stations. He explained that GIS was vital for effective decision-making and improved communication. His message to delegates was that

Seminars mark busy GEO-12

The annual GEO Event took place last month at the Holiday Inn Elstree. With two days of packed seminars **Richard Groom** and **Hayley Tear** were on hand to record proceedings.

the advantages of UAVs, arguing that they are very economic for mapping small to medium-sized areas, ideal for areas that are inaccessible by foot and offer a faster turnaround than satellite imagery. The company fly an inexpensive digital camera that still gives clear results – offers 5cm resolution at the default flight altitude of 150m with an average coverage per flight of 1.5 sq km.

Andrea Hildebrand from SenseFly showed their fully autonomous UAV, the SwingletCAM, which is sold through KOREC in the UK. She explained that their UAV is very similar to Gatewing's and so she concentrated on its use in conflict areas. The SwingletCAM was the first operational deployment of a UAV by the United Nations in February 2012 to support earthquake recovery projects in Haiti. The UAV provided the best quality imagery over Port au Prince, clearly showing surface details and people, and was chosen for its easy flight planning and ability to launch in seconds. She explained that safety was also important to the UN due to their public reputation – the SwingletCAM is only 500g, has a 10m/s cruise speed and is made from flexible foam. The UAV is also used by the Agriculture & Rural Development Agency in Northern Ireland for forest fire analysis, providing quick delivery of results data and the ability to use the imagery afterwards in an historical archive.

After a lunch break, we heard from **Peter Taylor** of Spheron, a regular exhibitor at the GEO events for several years. His 360° high dynamic range spherical

“geospatial” encompasses many tools that can often be forgotten. Companies need to go from being ‘geo-centric to geo-enabled’ – from focus on geospatial technology and tools to embedding geospatial information into your actual business processes – think spatially.

A geographer's view on BIM The first day also featured a marathon session on BIM. We thought the abbreviation meant Building Information Modelling but we were steered away from ‘modelling’ and towards ‘management’. Modelling is too restrictive for a concept that encompasses the whole life of an infrastructure. Each speaker made interesting points on BIM and the opportunities it offers but **Dr Anne Kemp** is a geographer by profession, a director of Atkins consultants, and so provided a geospatial viewpoint. She makes the point, obvious to those working in our industry, that BIM is based upon spatial components. When you speak to others, they think of BIM in terms of their specialisms. But the spatial component is still the glue that holds BIM together. The AGI has recognised the GI qualities of BIM and have set up a special interest group.

Managing change The following morning, **Erik Schuetz**, Penmap, spoke on new methods in data collection and cloud services. How can we advance data collection? He argued that many people look to advances in hardware. But while much has been achieved in that field, he believes that to go further

“
Companies need to go from being ‘geo-centric to geo-enabled’ – . . . embedding geospatial information into your actual business processes. . .
 ”

we need to look at work processes in the field – with software, IT and the advance into the cloud. He demonstrated a different approach with Penmap's office software made with the field worker in mind.

What not to do with maps! 'Why include "Map of..." titles?! It's obvious it's a map!' – this was one of many wry observations from **Mary Spence**, MBE and a past president of the British Cartographic Society, who offered delegates advice on how to get the best out of their maps. Another irritant in map design is design over function – some maps look beautiful but 'are kind of useless'. Spence stressed the need for consistency of layout and a balance of map elements – 'you don't have to fill every space'. Other points raised included keeping the N point as a simple symbol if required, don't overcrowd your map with data – judge the scale and appropriate amount, don't forget to consider colour deficiency sighted people when designing, and use appropriate type – 'this can make or break a map'.

GeoVisionary & the BGS **Julian Trick**, British Geological Society, argues that there is a serious need for geoscience data – it underpins our economy, for example in land use, energy, water supply, tourism etc. And the basis for land use assessment is quality survey. So what's the problem? Less funding but still the need to collect data, including on a national scale, he answered.

The BGS has digitised data but there was still the need for more efficiency. He explained that many softwares collapse under the sheer amount of BGS' data. So Virtualis created GeoVisionary – an immersive, multi-scaled, virtual environment that combines imagery, 3D geological models, GIS layers etc. The developers had to work to a number of user requirements including that any solution must add value to fieldwork and be usable on the desktop. BGS has found GeoVisionary to be a good tool for communication and discussion. Benefits include: survey efficiency gains over pen and paper; people can get-together and look over data together; it is linked by a custom toolbar in ArcGIS; and has the ability to communicate better with public, stakeholders etc – 3D is much clearer for people without geological knowledge.

Crowdsourcing for hydrographic mapping In a session with a hydrographic flavour, **Tim Thornton**, Team Survey (www.teamsurv.eu), talked about an initiative to crowd-source bathymetry from echo sounders on private vessels. We think of crowd-sourcing as a modern invention but he quoted an advert in *The Times* of 1879 inviting readers to send in interesting uses of English phrases as a rather earlier example. The principle is similar to that of Open Street Map, with many private vessels equipped with echo sounders and GPS. His company

Right: plenty of time to study the latest technology on the Leica stand.

© Leica Geosystems



Above: stands were busy especially on the first day but in the words of several exhibitors 'quality was up' on the quieter second day.

Right: 3D Laser Mapping's StreetMapper system was on hand in the hotel car park.



provides a box that can collect this data, which is then transmitted to TeamSurv and then added (ingested) into the database. The company keeps an eye on the quality of data by comparing it with other data so that they can detect outliers. They have received interest from publishers as well as harbour authorities and others who are interested in using the data to monitor non-critical areas.

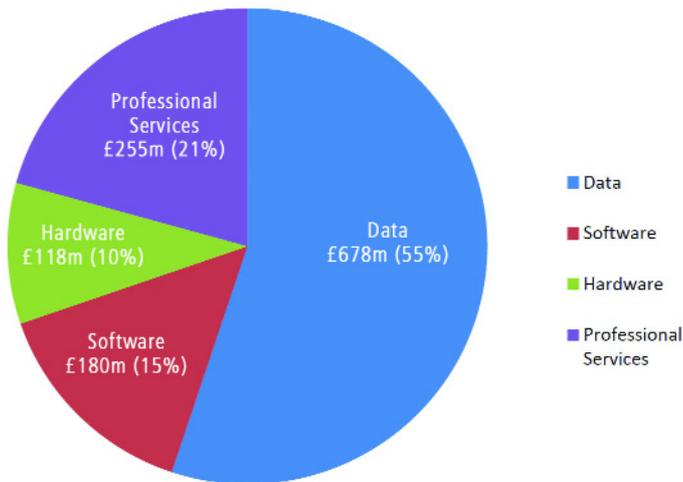
Update from the Environment Agency A presentation on the Environment Agency's updated format for river channel survey data (EACSD) heard **Rob Berry** from Halcrow describe the new format, which is intended to enable flood modellers to import data about river structures, such as bridges and weirs, directly into their modelling software. The format also records information about vegetation and bed material, so that channel roughness can be calculated automatically. The format will be published on 1 April along with the latest version of the EA specifications.

“

Another irritant in map design is design over function – some maps look beautiful but 'are kind of useless'.

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UK's location market



PREDICTING THE FUTURE has become big business. The Economist magazine does it annually and this year decided to look at what the world may be like in 2050. For most business planners knowing what the world will be like over the next 2-3 years will be rather more useful.

Forecasting the future can only be done with any reliability by knowing what your current

320 separate organisations from the commercial and public sectors including geomatics and marine survey, both of which are predicted to grow better than overall trends suggest driven by public sector infrastructure development plans. The “crown jewels” of the report is a breakdown of revenues sector by sector, an estimate of the numbers of people employed in the industry, a review of the technologies and business drivers plus stock market trends for the major quoted players.

The report builds on ConsultingWhere's previous market assessment three years ago (*Assessing the UK market for GI, GiSPro February 2009*) and is principally aimed at senior executives in both government and private sector investors and strategists. It also provides evidence of comparative studies from around the world that help benchmark the UK's adoption of geospatial technologies such as those from Daratech and McKinsey.

Andrew Coote, a director of ConsultingWhere, says:

“The picture of the UK market coming into 2012 was mixed with growth concentrated in the B2C mapping and a small number of

Assessing the size of the UK location market

The latest report on the size of the UK market for GI reveals several surprises and builds on previous studies but is it worth buying, asks **Stephen Booth?**

baseline is, the size of the markets and what the trends are that drive them. In sourcing much statistical information you will need to rely on factors like government statements and plans, emerging technologies (including the potential impact of some that emerged a generation or more ago but still not ubiquitous for want of identifiable demand) and social trends. Fortunately for the geospatial sector a rather useful report has just been published that tells us what the size of the market currently is and where it might be going in the short term, sector by sector.

This is a comprehensive study of the size of the UK market for location information products and services which has found the market currently exceeds £1bn annually and according to the authors, “there are real opportunities for those that develop a deep understanding of the needs of sectors in which location-centric solutions are still under-developed such as insurance, retail and media.”

Unique and recent research The UK Location Market Survey 2012 from ConsultingWhere is based on unique and recent research covering more than

industry sectors. Those suppliers reliant on the public sector saw little growth or in some cases saw turnover reduce since our last full survey in 2009.”

Headline figures for growth Headline figures from the report estimate that for location related software, professional services, data and hardware in 2012 the market is worth £1.23bn. This is expected to grow over the next three years at only 1-2% per annum. However, some sectors will experience considerably higher growth numbers, up to 13%. There are also factors that may distort the UK market when compared to Europe or the US as we shall see.

Other key points that emerge from the study include the burgeoning value of B2C business sector and even C2C (consumer to consumer) driven by new technologies that embed location into an increasingly diverse range of services through disruptive technologies like open source software, cloud computing and open data. The report also observes that geospatial technologies like GNSS (the combination of GPS and other satellite systems),

“

“there are real opportunities for those that develop a deep understanding of the needs of sectors. . .

”

LiDAR and 3D imagery are also leaching into the consumer space.

A note of caution is implicit however in some of the data. The UK market, the authors believe, is perhaps bigger than expected because of the major contribution of large data suppliers like Ordnance Survey and the UK Hydrographic Office. This may change in the future driven by the demand for open data.

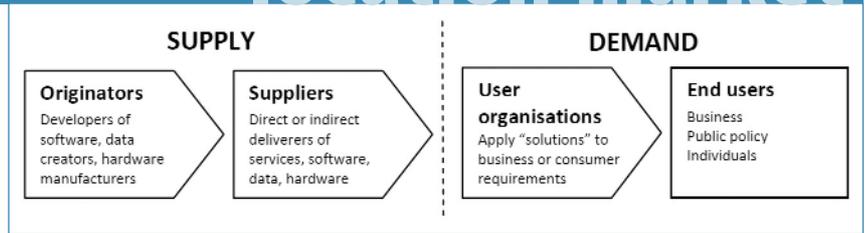
Without revealing too much detail (for which you will have to pay) we can give readers a little more flavour of the report's 145 pages.

The layout is structured in chapters that define the report's scope and separates the supply and demand sides of the market. Following chapters examine external influences (e.g. government, social change, technology trends etc); market analysis results (key hard data on the current players); comparative studies, both global, regional and national; growth trends by sector; and "Horizontal Technology Perspectives" otherwise known as geomatics and marine & coastal surveying. Each section contains an extensive discussion on the current scene and prospects in the short to medium term.

Eighteen industry sectors In addition to providing detailed market analysis for vertical markets, the report identifies topics such as growth trends with sections on 18 separate industry sectors including Local and Central government, Utilities, Defence and intelligence, Land and property, Retail, Transport, Financial services, Emergency services, Construction, Environment and conservation, Telecomms, Health, Media, Agriculture, forestry and fishing, Petroleum, Education and 'Other sectors'.

In local government, for instance, four 'waves' of GIS adoption are identified as having defined the sector since 1990. Today, the fourth of these waves is integrating these technologies into mainstream enterprise systems.

Market sectors in the UK are invariably dominated by some big hitters like BT and Virgin in telecomms – an area identified for above average



growth within the report's three-year scope (and beyond too). This will in part be driven by the Government's upcoming auction of 4g licences helped by the switch to digital TV, freeing up certain spectrum bands and is expected to enable significantly better mobile broadband. A further driver in this area is the Government's backing to expand fixed broadband.

Tech wars The report also looks at the external influences on the location market, particularly the "tech wars" being fought out between Apple, Google, Oracle and others. The stock market analysis also looks at some of the recent mergers and acquisitions activity.

The report trenchantly concludes that "The value of geospatial information will only be fully realised once this wave has been completed." For each sector there is thoughtful intelligence on adoption of GI and prospects for the future through detailed analysis drawn from many sources. To gain this level of knowledge would take a senior executive, together with an assistant or two, several months of research.

This review is therefore but a taster of what's in the whole report, which you will need to buy in order to extract the nuggets that may help you drive your business forward. There are numerous charts, tables and figures to help with understanding the impact of location information on market sectors. There is no health warning but it should go without saying that markets can go up as well as down.

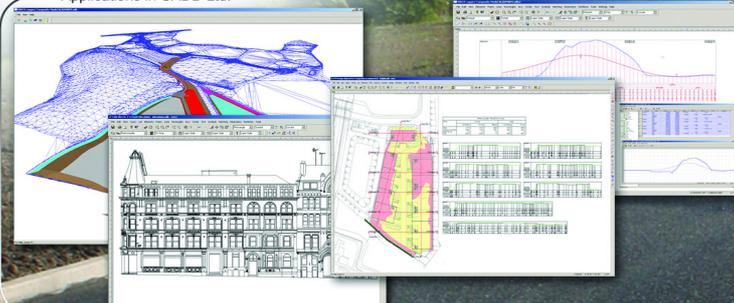
- **The UK Location Market Survey 2012 price £750 ex VAT. To view the table of contents and purchase the study visit: www.consultingwhere.com/reports.htm**



The UK market... is perhaps bigger than expected because of the major contribution of large data suppliers...




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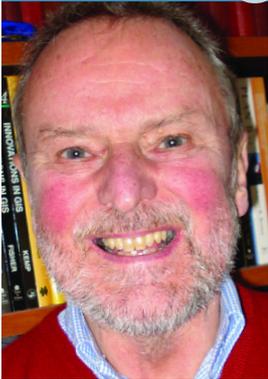
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INSPIRE UK GI community



Above: Ian Masser's analysis suggests there may be more interest from the UK in European level GI activities than people might believe.

IN RECENT YEARS, the United Kingdom has come to be regarded by other European countries as a Eurosceptic nation and there have even been campaigns in newspapers such as the *Daily Express* supporting its partial or total withdrawal from the European Union. There have also been some indications in the UK geographic information community of a lack of interest in European GI affairs.

This may have been a factor in the Association for Geographic Information's decision to resign from the European Umbrella Organisation for Geographic Information (EUROGI) in September 2007 on the grounds that 'continued EUROGI membership was not considered to provide sufficient value.' It is also worth noting that the European Special Interest Group of the AGI was shut down through lack of interest in 2006. With this in mind, it may be useful to explore the extent of UK participation in the implementation of the flagship INSPIRE Directive to test the strength of UK interest in pan European activities of this kind.

UK organisations are involved in the implementation

services'. SDICs may represent a common interest in data themes, spatial information services, or legal and procedural issues. They may represent different sectors of society or different geographical areas and can also be seen as strategic partnerships within and between the public and private sectors. SDICs operate alongside the Legally Mandated Organisations (LMOs), which are formally charged with one or more elements of INSPIRE implementation.

The Commission announced an open call for SDICs and LMOs to register their interests in the second half of 2004. By the middle of February 2012, 473 SDICs and 272 LMOs had registered their interests. These stakeholders are kept informed about developments, have the opportunity to review and comment on INSPIRE deliverables and may also test draft specifications.

Quantitative analysis It must be recognised that the findings of the following analysis should be treated with some caution as there is some duplication of entries and it must also be recognised

Involvement of the UK GI community in Europe

Is there a lack of interest in European GI affairs in the UK? Prof **Ian Masser** explores the level of UK interest in the INSPIRE Directive against the perceived pan European activities of others.

of the INSPIRE Directive as a result of their participation in Drafting Teams and Thematic Working Groups and their registration as Spatial Data Interest Communities (SDICs) and Legally Mandated Organisations (LMOs). The last two activities are particularly interesting as an indicator of the wider extent of UK interests in INSPIRE. With this in mind, the following analysis examines the involvement of a number of national member states, including the UK, with reference to the databases that are maintained by the European Commission on the INSPIRE website (<http://inspire.jrc.ec.europa.eu/>). These contain details of all the registered organisations and recently the Commission has added interactive maps and tables showing the distribution of SDICs and LMOs in each member state.

Context From the outset, the European Commission recognised that the implementation of the INSPIRE Directive would require the participation of a large number of stakeholders from the member states. To make the process as inclusive as possible it invited organisations throughout Europe to register as Spatial Data Interest Communities (SDICs). SDICs 'bundle the human expertise of users, producers and transformers of spatial information, technical competence, financial resources and policies, with an interest to better use these resources for spatial data management and the development and operation of spatial information services. Through their activities they drive the demand for spatial data and spatial information

that the inclusion of an organisation in these lists does not necessarily indicate the strength of their actual involvement. Furthermore, the entries themselves are not regularly updated by the organisations concerned and there may have been a lot of changes since their initial registration. The number of entries is also constantly changing as new organisations are added to the database. Nevertheless, it can be argued that a statistical evaluation of the information contained in this database is likely to give a broad indication of the level of UK interest in this pan European initiative in mid February 2012.

Table 1 shows the number of registered SDICs and LMOs for the four largest European countries (France, Germany, Italy and the UK) and five other countries that might be seen as high flyer countries in terms of geographic information expertise (Belgium, Denmark, Finland, Netherlands and Sweden). From this it can be seen that the number of UK SDIC and LMO registrations is larger than that of any other country with 59 SDICs and 36 LMOs registered in mid February 2012. The high latter figure probably reflects the duplication of LMOs in the devolved environment of Northern Ireland, Scotland and Wales.

The relatively low figures for some countries may reflect the reluctance of some organisations in these countries to enter details of their activities on a database which is primarily in the English language and the high score for Italian SDICs may be due in



... the number of UK SDIC and LMO registrations is larger than that of any other country with 59 SDICs and 36 LMOs registered in mid February 2012.



some measure to the location of the Commission's Joint Research Centre at Ispra. It should also be noted that the number of registrations for the high flyer countries is generally much lower than is the case for the larger countries although the high score for Belgium probably reflects the Brussels EU effect.

A useful indicator of the strength of national representation in these two activities is to compare the number of each country's registrations to its proportion of the European Union population as a whole using the following formulae:

$$X_i = Y_i / P_i$$

where:

Y_i is the number of SDICs (or LMOs) in country, *i* expressed as a percentage of the total number of SDICs or (LMOs) listed in the database

and:

P_i is the population of the country, *i* as a percentage of the total European Union population on January 1st 2011.

If this formula is applied to the above figures, the scores can be interpreted as follows: values of more than one indicate that the country is relatively overrepresented with respect to the number of its registrations relative to its total population while a score of less than one indicates that it is relatively underrepresented.

From this table, it can be seen that the UK scores 1.11 and 1.09 in both cases and this suggests that it is relatively overrepresented. This contrasts sharply with the very low scores recorded for Germany, which are at best just over half of what might be expected if the size of its population is taken into account. The indicators also show that France is slightly underrepresented in both cases while Italy scores highly with respect to the number of its SDICs and very low in the terms of its LMOs.

The choice of the high flyers is largely vindicated by their scores in Table 2. A score of two or more in these countries suggests that they have more than twice the number of SDIC or LMO registrations than might be expected from their population size. All three Nordic countries (Denmark, Finland and Sweden) have much higher scores than those of the larger countries with Denmark and Finland recording LMO scores of 3.73 and 3.51 respectively. As noted above, Belgium scores very highly in both cases while the Netherlands scores 1.55 and 1.36 with respect to the number of SDICs and LMOs relative to the size of its population.

Conclusions Although more detailed studies are needed that compare the nature and type of organisations which have registered on the database in each country, the findings of this analysis suggest that the UK GI community is well represented in most of these activities, which surround the implementation of the INSPIRE Directive. These findings are particularly

Selected large countries	No of SDICs	No of LMOs
France	48	25
Germany	42	22
Italy	57	11
United Kingdom	59	36
Selected high flyers		
Belgium	30	15
Denmark	11	11
Finland	9	10
Netherlands	22	12
Sweden	20	8

Table 1: Number of registrations for SDICs & LMOs in selected European countries.

Source: <http://inspire.jrc.ec.europa.eu/>

Selected large countries	SDIC Scores	LMO Scores
France	0.87	0.73
Germany	0.60	0.51
Italy	1.11	0.34
United Kingdom	1.11	1.09
Selected high flyers		
Belgium	3.23	2.58
Denmark	2.33	3.73
Finland	1.97	3.51
Netherlands	1.55	1.36
Sweden	2.50	1.60

Table 2: Comparative evaluation with selected European countries.

interesting when the UK scores are compared with other countries with a similar population. This suggests that organisations in the UK have been more active in registering their interests in INSPIRE than either France or Germany. In overall terms, then, they go some way to refute the view expressed at the beginning of this article; i.e. that there is a general lack of interest in the UK GI community in European level GI activities such as INSPIRE.

About the author:

Ian Masser retired as Professor of Urban Planning at ITC in the Netherlands in 2002. Educated in geography and town planning at Liverpool University, Ian received his PhD in 1975 and a LittD in 1993. He coordinated the UK Economic and Social Research Council's Regional Research Laboratory Initiative (1986-91) and co-directed the European Science Foundation's GISDATA scientific programme (1992-7). Ian was Founder Chairman of the Association of Geographic Information Laboratories in Europe (AGILE) (1998-2000), President of the European Umbrella Organisation for Geographic Information (EUROGI) (1999-2003), and the Global Spatial Data Infrastructure Association (GSDI) (2002-4).



WE HAD NOT REALISED the illustrious company that Eurofile keeps. The *New York Times* has a Eurofile column on its T-magazine website and the students' union at the London School of Economics has a Eurofile blog run by its European Society. The former covers "the best tables (and beds) on the continent" which, by the way, includes these islands. So recent articles highlighted Le Havre, Belgrade and the first Michelin 2 star pub in UK, the Hand and Flowers in Marlow. The LSE version is rather more academic and its most recent 'topic of the week' – with several very learned contributors – is 'Solidarity in Europe'. Regular readers will know that we try to steer a middle course, at least when averaged over the year, between travelogue and more weighty matters.

Novel geography Last November I received a Kindle as a birthday present. Although not as aesthetically pleasing as a hardback book – or perhaps even as a gaudily covered paperback – it does have the advantage of a huge free back catalogue and it weighs

this tale to be referenced in a column devoted to Europe. Dickens' *A Tale of Two Cities* also qualifies and describes the French revolution and how it was perceived from this side of the channel. One effect was the founding of the Ordnance Survey and its first map of Kent. The cartography of the late 18th C gave even less indication of the state of the roads depicted than do today's maps. Dickens' opening chapter records how awful the London to Dover road must have been. Passengers had to walk to lighten the load for the horses when going uphill in the mud, and were constantly alert to the possible attentions of highwaymen. The cross channel 'packet' was the ship that took post and passengers to France; today our messages still travel in packets but at the speed of light. But the problems of highwaymen and pirates remain to concern us.

Imagine my surprise, while reading Dickens on the way home, to find mention of Abyssinia. Seven miles high, somewhere over Egypt on an Ethiopian Airways 767, reading on a Kindle a book written in 1859 about

Africa file Armed with several literary classics and a land registration consultancy commission from Finland, **Robin Waters** embarked on a trip to Ethiopia. Readers will enjoy his coincidences, historical tales and the all-too-familiar struggle with street names and building numbering of developing nations.

less than most single books, however many 'tomes' you load. It is ideal for travelling, whether on business or for pleasure, especially when cabin luggage is very limited. So when I flew to Addis Ababa (on business) last month I made certain to carry my Kindle. In a belated attempt to catch up on my classics, albeit with a geography as a central theme, I have been reading **Mark Twain**, **Charles Dickens** and, my favourite so far, **Patrick Leigh-Fermor** who died last year.

Twain's *The Innocents Abroad* records a cruise in the Mediterranean in 1867 with either comic or caustic comments on fellow travellers and historic sites alike. Side trips to the Paris Exhibition and Odessa, in what is now the Ukraine, certainly qualify

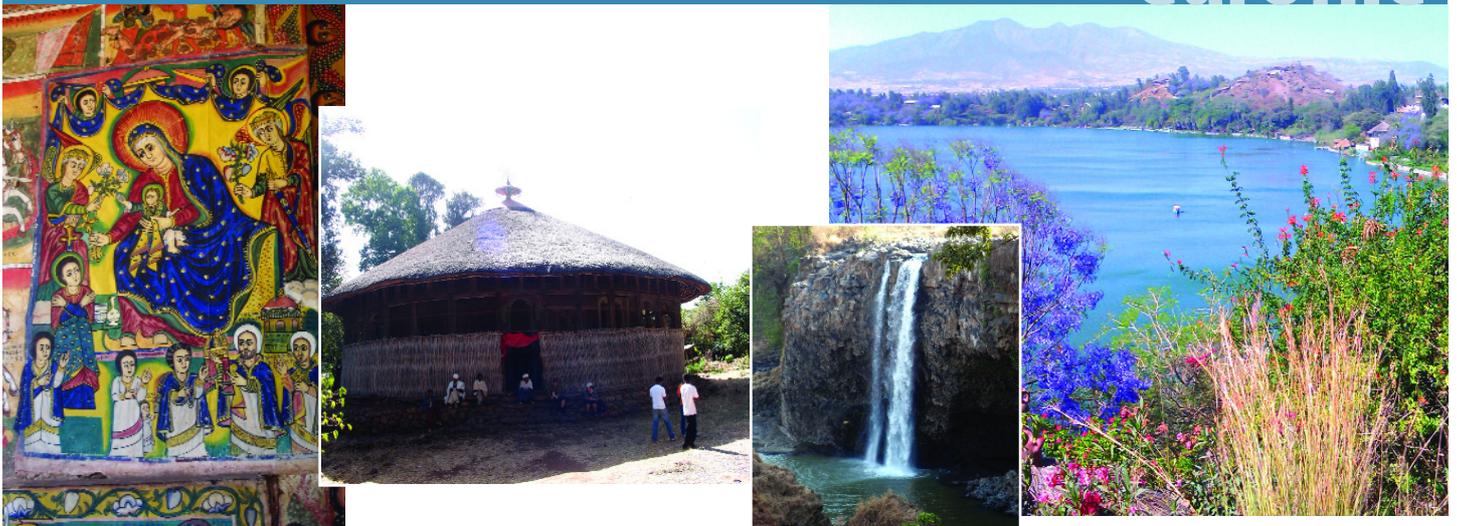
events in the 18th century and I see references to both Abyssinia and Ashantee. The former, now known as Ethiopia, and the latter, subsumed into the British Gold Coast and now part of Ghana, both had fearsome reputations for European explorers. I last visited Ghana in 1976 when I closed the Directorate of Overseas Surveys office after completing the fieldwork for the 1:50,000 mapping. And why was I in Ethiopia? Working for a British subsidiary of a Swedish consulting firm subcontracted to a Finnish company working for the Ethiopian Ministry of Agriculture and paid for by the Finnish aid programme – what a tangled web we weave! (though we are not practicing to deceive!) I am helping with the IT side of land registration and look to the

internet for reasonably up-to-date mapping and satellite imagery. The Ethiopians are now setting up a GNSS reference system but have found that many of the survey pillars left by DOS in the 1980s (when UK development aid paid for 1:50,000 mapping) have long been destroyed.

Too many names Travelling to Ethiopia was also a great excuse to buy two of Evelyn Waugh's classics. Waugh in Abyssinia recounts his rather bizarre experience as a reporter for the *Daily Mail* as the Italians invaded the mountain empire of Haile Selassie. His novel *Scoop* is also based on the same experience and is much funnier! His sympathies, and certainly those of his



Right: The Maritime Training Institute over 500 miles from the nearest sea, since Ethiopia is in fact landlocked.



newspaper, were with Mussolini and the assumed governance and infrastructure which would follow colonisation. Apparently, the Italians brought a lot of their own road building labour – just as the Chinese are now doing for the infrastructure projects that they are funding. These include road schemes in Addis and large agricultural schemes in some of the less populated parts of the country.

The Italian occupation was short lived. They invaded British territories in Sudan, Kenya and Somaliland when they declared war in 1940. Advances into Kenya and Sudan were limited by lack of fuel whereas the Italian army overran British Somaliland completely with our forces evacuated to Aden. But British, Indian and colonial African troops were soon reinforced and, with the not inconsiderable help of Haile Selassie's patriots, forced an Italian surrender in early 1941. This campaign lives on in Addis Ababa with Churchill Road and General Wingate Street in prominent positions.

But a quick look at Google maps for Addis is enough to confuse anyone. Several main roads have two names. Churchill is also known as Gambia and the Bole Road – the main road to the airport – seems to be synonymous with Africa Avenue. We were told that there is now a scheme to number all the streets in the capital and to have numbered buildings. At the moment there is numbering of buildings within districts and also a planned cadastral registration scheme within smaller blocks. Any improvements would be welcome. On one occasion we were sent several miles down a road in the wrong direction due to confusion over its name (between a local driver and the local office that we were visiting) and the lack of any visible numbers.

Recognising rights to land Away from the thick diesel smog of the capital we visited Bahir Dar on Lake Tana. This is the capital of Amhara, one of the more populous – and prosperous – regional states that make up this federal country. The lake – and the rivers that flow into it – is the source of the Blue Nile, though the spectacular falls that deposit this great river into its first gorge are not very spectacular at this dry time of the year. We had to make do with a very fleeting glimpse of

a family of hippopotami on the banks of the lake and a visit to some old monasteries still in use by the Eastern Orthodox Church to which well over half the population of Ethiopia belong.

Amhara has a near 100% coverage for its initial land registration programme – the first time that the majority of the population have ever had official recognition of their rights to land. But, unusually, this register, and the 'Green Books' issued to the land owners, have only textual descriptions of the parcels of land in question. The register records the owners on the north, east, south and west sides of any individual plot. Stage two of the registration process is proceeding much more slowly, not least because it is providing a graphical description of the land. Various trials are being run to determine the most effective and efficient methods for representing the parcel boundaries in digital form – ground survey with total stations, handheld GPS, more sophisticated survey strength GPS and/or use of ortho-rectified aerial or satellite imagery. In the end one suspects that it will be 'horses for courses' depending on the nature of the terrain and the amount of human settlement. There is certainly an up-and-coming software industry ready to support the integration of any of these data capture techniques into a working system that can provide secure title to land owners and vital land administration information for regional and federal governments. We take our land rights in Europe for granted though the Ethiopian equivalent of the French Revolution only took place in 1984 and it was quite violent enough to justify Dickens' 19th C reference to Abyssinia. It remains to be seen if the country can create a modern, transparent and accessible land registry any time soon. It is certain that the expansion of the cities, and the long leases being granted to large investors, certainly require urgent action to remedy uncompensated land grabbing by powerful interests.

• **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.**

Above from right to left: A Madonna painting, a monastery near Lake Tana, the Blue Nile falls (only a dribble at this dry time of year!) and a crater lake south of Addis.



. . . we were sent several miles down a road in the wrong direction due to confusion over its name (between a local driver and the local office that we were visiting) and the lack of any visible numbers.



case study land management



Technical Highlights:

- Trimble GeoXT 6000 series handheld provides submetre accuracy.
- With Trimble Floodlight technology field teams can work in difficult GNSS environments.
- Built-in camera makes it easy to capture images in the field and maintain their correlation to data in the GIS.
- The GeoXT 6000 series handheld increases speed, accuracy, and ease of data collection for field inspectors.

BASED IN THE CAPITAL CITY of Riga, the Latvian Rural Support Service (RSS) is responsible for implementing EU policy in the agriculture, forestry, fisheries and rural development sectors across a country that is home to more than 2.2 million people. One of the organisation's primary tasks is to oversee the EU's Single Area Payment Scheme: a subsidy programme designed to provide direct

explains Bordāns. "Agricultural area measurements are very often made in difficult GNSS conditions near or surrounded by trees, woods, bushes and other situations under canopy, and it's important that we get accurate data even in these conditions." With the GeoXT handhelds, field inspectors can collect data quickly and easily in the field and achieve submetre accuracy with postprocessing.

Handhelds aid Latvian farmers' EU payments

Latvia's Rural Support Service field inspectors rely on Trimble GeoExplorer handhelds to gather precise agricultural data for the EU's Single Area Payment Scheme subsidies to farmers, explains **Cori Keeton Pope**.

payments to farmers who cultivate crops and maintain farmland in an environmentally friendly way.

Reliable technology For the RSS, this means carefully and continually monitoring land parcels throughout the country, including identifying land borders and keeping track of precisely how much is farmed on a parcel of land. To do so, inspectors rely on GNSS technology to make on-the-spot checks for claimant farms.

"We have been using Trimble GeoExplorer handhelds since 2003, and it simplified our data collection and management work," explains RSS's **Edgar Bordāns**. "This summer, we upgraded again, purchasing 35 of the new GeoExplorer 6000 series GeoXT handhelds."

The GeoXT 6000 series is a rugged GNSS handheld receiver with Trimble's Floodlight technology that dramatically improves position availability and accuracy in difficult GNSS environments – particularly important for the inspectors. The latest handheld comes with a larger screen and longer battery life than its predecessor and has a built-in camera.

"Forests are one of Latvia's natural characteristics,"

"Farmers are getting financial support for agricultural activity, so it's important for both the farmer and the EU to have very accurate measurements of the land that is being farmed," continues Bordāns. "At the same time, it's important to us to have technology that is easy to learn and use and is reliable and durable in the field. The GeoXT handheld meets all of these requirements."

Each field inspector has a Trimble GeoXT 6000 series handheld, loaded with Esri Shapefiles, reference parcel data from the Land Parcel Identification System (LPIS), and land property boundary data from the cadastre. Once they reach the farm in question, the field inspectors record the GNSS position, area, perimeter, shape, and size of the different agricultural crops. As they move through the forms loaded on the handheld, they record attributes such as parcel number, crop type, and remarks as necessary.

Using the handheld's built-in camera, field inspectors can also add photos of ineligible features like roads, trees, ponds, ditches, bushes, and other land features that are excluded from the agricultural footprint of the parcel.



... we can gather data faster, with greater accuracy than ever before. . . knowing we're working with reliable equipment that provides precise measurements.



case study land management

Saving time and money Back in the office, post-processing is done using Trimble's GPS Pathfinder Office software with a package of GNSS post-processing tools designed to develop GIS information that is consistent, reliable and accurate from GNSS data collected in the field.

Using the differential correction system available from LAPTOS – the GNSS reference station service provider in Latvia – the inspectors are able to achieve submetre positional accuracy. Once the data is post-processed, it is checked for data quality and then transferred to the organisation's Agricultural Area Register GIS (AARGIS) and, at the same time, the updated Shapefiles are uploaded to the GIS.

"The entire system is streamlined and easy to use, which saves us time both in the office and in the field," says Bordāns. "With the GeoXT handheld, we can gather data faster, with greater accuracy than ever before, and we have the peace of mind knowing we're working with reliable equipment that provides precise measurements."

Another benefit Bordāns and the rest of the RSS team are seeing from the handheld includes the new sunlight optimised display that makes it easier to view the screen in outdoor conditions, even in bright sunlight. "The new GeoXT handheld is incredibly fast with a strong signal and works better



Equipment Used:

- Trimble GeoExplorer 6000 series GeoXT™ handheld.
- Trimble Floodlight satellite shadow reduction technology
- Trimble GPS Pathfinder Office software

than any other handheld I've tried both in bright sunlight and under tree cover," says Bordāns. "There's no question this new handheld is saving us time and money, while also making our work more efficient and more accurate. We can't wait to find more ways to implement it into other parts of our workflow."

Above: The Latvian Rural Support Service (RSS) has to continually monitor land parcels throughout the country.

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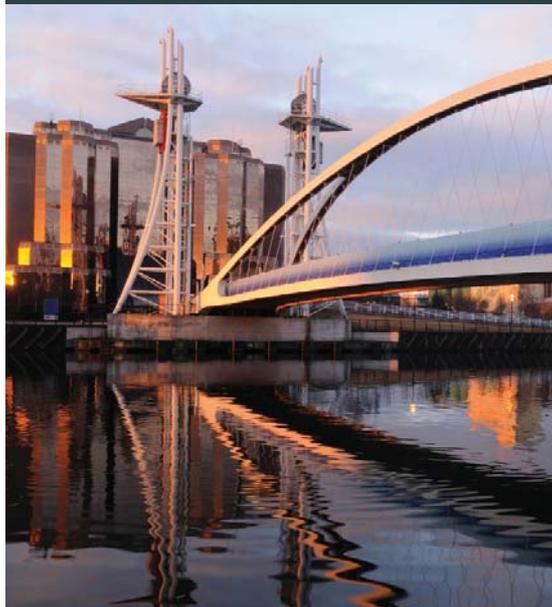
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the GiSPro interview



A member of the Experian UK Data Council, Paul Malyon is responsible for business critical reference data used by the many thousands of customers of Experian QAS. Paul began his career within marketing and research managing a large international business data portfolio for a successful demand generation business. Joining Experian in 2010, Paul used his skills in data management to take on an ever expanding portfolio of assets ranging from Royal Mail PAF to OS AddressBase and around 50 other reference datasets used in Experian QAS products. Passionate about the power of data, he works with stakeholders from around the Experian group and beyond to ensure the latest and most accurate data is available to power intelligent decisions. Paul lives in London and holds a BSc Geography from King's College London.

As a large commercial user, what is your experience of AddressBase? We've been working with the Premium version of the dataset for nearly a year. We took an early decision to focus on this version because it offers the most comprehensive data. So far we've been impressed with the detail and completeness of the file and how GeoPlace has successfully matched PAF, NLPG & AddressLayer 2 into one reference dataset. With the

requirements of a diverse user base influence changes and updates. At Experian QAS we now have software solutions that work with the data and we are constantly improving these – every time the OS releases a new iteration of the file to us.

Is AddressBase the definitive address database accepted by the industry? Combining postal, non-postal, planned, and historic addresses, with grid references, as well as consumer and business data, has given us a product that is much better than what we've had before. I think acceptance will come with time. There are still many users of PAF, NLPG, Address-Point and AddressLayer 2 today, and it will take time to get everyone using the new products. The clock is now ticking – these products are likely to be withdrawn in April 2014 – and this will hasten acceptance.

There will always be a need for more value added data, such as business data files available from Experian and other organisations. Simply put, the more data you can match together and form into a single reference file, the better.

AddressBase: the definitive address database?

Paul Malyon, Experian QAS' Data Product Manager, talks to GiSPro's Robin Waters about his experience in using AddressBase Premium and the latest portfolio of database products from Ordnance Survey and GeoPlace.

addition of the One Scotland Gazetteer in the spring of 2012 we will have complete coverage of Great Britain. The challenge now is to fill in some gaps and use the resources available to further enhance the data and ensure that all of the contributing agencies understand the requirements of end users.

We also laud the aim of AddressBase: to take a confusing array of files and make a new dataset available to everyone under a single licence (for the public sector) and under one pricing model for commercial users. This is a big step forward. It's been refreshing to be close to this process and to watch different government agencies working together with the clear aim of improving citizens' lives.

But the job is not yet done! Northern Ireland is part of the UK but a big gap in the dataset. I recommend that the government take steps to fill this gap as soon as possible.

So you think AddressBase is working then? If you're asking 'Do we now have a definitive spatially referenced address file for Great Britain?', then 'Yes – as soon as the Scottish data is included'. If you're asking 'Is the file perfect?' then 'Not yet, but progress is being made'.

Creating AddressBase Premium from nothing to a marketable product in six months was a massive task for GeoPlace and Ordnance Survey. They have done an amazing job. But there will always be work to be done as usage of the data increases and the

How do you see the Royal Mail in the new context? They often seem aloof from spatial referencing and change postcodes whenever their needs dictate. The Royal Mail is certainly on-board with AddressBase. The PAF file forms an important part of the data. But there is a need for more clarity around licensing. The current public sector mapping agreements (PSMA and OSMA) aim to provide free access to the data within those agreements to public sector bodies. Freeing up the PAF elements would make AddressBase even more attractive to the public sector and simplify the migration process immensely for those organisations. But this is one for the Royal Mail, Ordnance Survey and Department for Business, Innovation & Skills to solve!

Although OS and Royal Mail are now under the umbrella of the same Ministry, would there still be some benefit from banging their heads together? I think the fact that PAF is already in the file shows that the triumvirate of the Royal Mail, OS and GeoPlace is working well without the need for crash helmets. It remains to be seen whether OS being in the new Public Data Group and/or the potential privatisation of Royal Mail will have any effect on the triumvirate.

Do you think that the licence terms for using AddressBase are reasonable for smaller organisations? I think smaller organisations are always going to be asking tough questions about data licence fees. It's clear



It's been refreshing to be close to this process and to watch different government agencies working together with the clear aim of improving citizens' lives.



that AddressBase (and certainly the Premium version) is out of reach for many SMEs. However, thinking about the business processes that are supported by this type of data, these organisations are probably going to be just as successful using datasets such as PAF, Postzon or open alternatives, such as CodePoint Open. It's a case of working with suppliers and partners to understand what your requirements are and comparing those against the features of the various options.

Will AddressBase now overcome the problems of dealing separately with NLPG, Royal Mail, OS and other providers? I think anything that tries to simplify data access is a good thing. With the phasing out of the older OS files in 2014, we are now getting an idea of the choices we'll have. Also, the advent of GeoPlace means that a lot of the hard work dealing with multiple datasets and suppliers has been done before data reaches the end users. The different data source organisations will still exist, but hopefully they'll keep working together to benefit the public sector and wider market.

But, as always, addresses are just the start for many processes. AddressBase now provides the best possible address data, but there will continue to be a requirement for additional business data, consumer demographics, mobile, email and social network data to complete the contact data jigsaw. AddressBase gives us all a much better start though!

For over 15 years we have had an address headache with database discrepancies. Some are sceptical about AddressBase being able to cure all of the pain. What are your thoughts? Well, I can't comment on the state of play 15 years ago as I was still at school using OS maps in geography classes! However, I have seen a great deal of the frustration within organisations dealing with different sources and standards of data. AddressBase and the INSPIRE regulations are helping, as are new technologies such as Single Customer View tools and the possibilities offered by Linked data.

AddressBase has some real aces up its sleeve in terms of the UPRN (the ever present, pervasive unique ID on every location), the matching of this to other unique IDs like the UDPRN and TOID and of course the cross-references to other OS files, such as the OS MasterMap ITN layer. I'm sure that as acceptance of the data grows, more links will be forged by OS and GeoPlace and we will see more technologies that make it easier to match people, place, time and activity in simple, useful ways.

How would you recommend that GeoPlace/Ordnance Survey handle the different coordinate system in N Ireland? This is obviously going to be a challenge. We already work with both of the systems via the OS products and the Northern Irish 'Pointer' dataset. From our experience, a simple conversion table would be a good start rather than suggesting a change to any systems. However, there is a more fundamental issue than this technical one. The agreements put in place to

cover address and mapping data like the OSMA and PSMA have not been extended to cover Northern Ireland. I don't know why but I think there needs to be a change in the working relationship between the various agencies to open up access to this data for users in England, Wales and Scotland. Once there is a shift in the current attitude, I'm sure that the GIS experts at all of the relevant agencies will solve any technical problems.

Is the relationship between the OS and NLPG teams working? The creation of GeoPlace LLP in April 2011 and the close working relationship between that organisation and the OS has been a really useful step. There have been staff swaps between OS and GeoPlace to facilitate the relationship and this is helping to convince both sets of customers that it is working. I think there is clear delineation between the two organisations. GeoPlace builds the National Address Gazetteer (NAG) and liaises with the local authorities, Royal Mail and other organisations that contribute; Ordnance Survey then engineer and market the AddressBase range of products as well as handling licensing issues for partners and end users.

What do you see as the future for AddressBase and address data as a whole? I think that we're going to see AddressBase growing and maturing over the next year or two. Then, who knows? We may see more data from other sources being added such as the data generated by telephone or utilities companies on the locations they serve. I'd also like to see some kind of feedback system allowing the community to validate and improve the data to create an even more complete file with valuable intelligence from end users included.

As for the address data market, the opportunities provided by new technologies such as smart phones and the influence of the Open Data initiative will make for some exciting times. We're going to see some changes but we'll continue to see the need for accurate reference data, which is backed up by good quality software and additional data and services for a diverse set of users, all with very different requirements.

What do you think of the multiplicity of postcode boundary products available? We've used a number of these in our products over the years and all have their own advantages in terms of the data, licensing and so on.

There would be a danger in any attempt to make something definitive as there would be damage to those companies, like GeoPlan and Dotted Eyes, who have marketed their products successfully for some time. However, if we are truly moving to a single address register with AddressBase then it would make sense to have a single Postcode Boundary system to go alongside this.

I think this is a conversation for the Royal Mail and Ordnance Survey to have with their partners and customers to come up with the best way forward. I know the Government want to encourage the growth of data industries and would not want their own Trading Funds to damage existing, valued contributors.



I'd also like to see some kind of feedback system allowing the community to validate and improve the data to create an even more complete file with valuable intelligence from end users included.



laser scanning



There are many diverse uses of laser scanning systems. Far left shows a SiteMonitor laser scanning system used by the Snow and Avalanche Study Establishment to monitor snow cover build up. The RailMapper system (middle) is used for safety inspections and maintenance surveys on railways and tramways and the far right image shows a 3D-R1 remote surveying vehicle (RSV) (credit: Bernie Pettersen).

SEVERAL YEARS AGO I recall a number of articles (perhaps even one of mine!) about laser scanning systems coming of age. The technology had moved from the confines of academic research and high end engineering projects. Prices had dropped and the

factor in the disaster hit area where much of the land is reclaimed from the sea. It is thought that this information will provide a valuable resource for remediation works and from which to assess future vulnerabilities and prepare emergency responses.

Laser scanning grows up – from teenage angst to middle aged wisdom

Dr **Graham Hunter**, Executive Chairman of Nottingham based 3D Laser Mapping, reviews how the 'wonder child' technology is faring in times of strict budgets, greater expectations and a data-hungry generation.

technology was finally being driven by user requirements. Looking back, these were probably the teenage years for the industry; a time of exciting new technology, suppliers competing with successive product launches and off-the-wall applications. While there are still new developments in the functionality of laser scanning systems, feedback indicates that 'it's not what you've got. . . it's what you do with it!'

Going mobile One of the major developments of the recent years has been the onslaught of mobile mapping systems. StreetMapper, thought to be the first commercially available system, was demonstrated as far back as 2004 but was not formally launched until 2007. In the past five years, the popularity of mobile mapping has blossomed with systems in use around the world; from Indonesia to west coast America, Russia to South Africa and Brazil to Australia.

An example of how the system has been used was the assessment of the damage caused by the Japanese earthquake in March 2011. A mobile mapping system, operated by Asia Air Survey, was used to capture highly detailed 3D survey data. The data was used to assess the structural damage caused by the earthquake and tsunami, as well as the effects of soil liquefaction. The latter – loss of strength from saturated soil – was an important

Less high profile but just as important is the use of 3D laser scanning to support day-to-day maintenance and construction projects. Dutch surveying company, Geomaat, is capturing millimetre accurate measurements in record times to support a range of highway design, construction and maintenance projects. Using the mobile system, and specially developed point cloud software, Geomaat can calculate highly accurate cutting, milling and asphalt figures, create as-built models, and undertake change detection.

"In the past these types of measurement were undertaken using total stations which was time consuming, costly, and had a big impact on other road users," comments **Jelle de Vries**, managing director of Geomaat. "For example a 10km stretch of highway would have taken at least 20 nights to survey, each night requiring extensive traffic management or road closures. The resulting measurements would then have taken about a week to process. We can now deliver a new design, from start to finish, in less than a week! This is a huge advantage in itself – we estimate savings for our clients of up to 50 per cent."

From robots to golf carts! Mobile mapping systems are not, however, confined to road vehicles. Obvious examples include airborne LiDAR systems used to capture the wide area digital terrain and surface

“
While there are still new developments in the functionality of laser scanning systems, feedback indicates that 'it's not what you've got. . . it's what you do with it!'”

Right: A Riegl VZ-400 laser scanner used by the Metropolitan Police for collision investigation.



models with which we are all familiar. More recent advances have seen portable systems for use on off-road vehicles and systems specifically developed for railways. Based on the proven StreetMapper system, RailMapper is a flexible system that can be operated at speeds in excess of 100 km per hour on a wide variety of host vehicles, capturing highly accurate measurements for clearance determination, overhead wire and sign detection, asset management as well as construction and refurbishment projects – all without disruption to the network.

Other fascinating uses of laser scanners include the development of driverless vehicles such as those in the DARPA Grand and Urban Challenges; remotely controlled robots for use in inaccessible or inhospitable environments; a gyrocopter and even an autonomous golf cart!

As mobile mapping systems traverse city streets, highways, railways and runways, static laser scanning is not standing still! A recent announcement of funding by the Department of Transport is set to revolutionise the investigation of road collisions. This will reduce congestion and help reduce consequent costs to the UK economy. The £2.7 million grant will enable 27 English police forces to purchase 3D laser scanners that will be used to collect highly detailed 3D images of crash sites up to 50 per cent faster than traditional survey techniques.

“Before committing budget and resources to laser scanning it was important that we fully understood the benefits it afforded,” says Sergeant **Dave Kingston**, senior collision Investigator of the Metropolitan Police Road Death Investigation Unit. “An independent pilot study concluded Riegl laser scanners delivered an onsite time saving of 50 per cent compared to traditional total station surveying and collected thirty per cent more data than other scanners we trialed, helping us cut road closure times by up to 90 minutes.”

Static or terrestrial laser scanning applications also include avalanche monitoring, as-built structural modelling for Building Information Modelling (BIM) as well as the mining industry for cut-and-fill volume calculations and deformation monitoring for safety applications. Now laser systems are even being fitted to Autonomous Haulage Systems (AHS) – super large dumper trucks – to provide additional intelligence for operators by controlling the fleet and monitoring operations.



Above: Laser scanned data collected by StreetMapper in the aftermath of last year's Japanese earthquake and tsunami.

Onset of middle age? These are just a few of the diverse uses of laser scanning systems around the globe. They not only demonstrate innovation and imagination but also provide clear evidence of savings and gains that can be achieved through the application of what is now ‘mainstream’ technology. However, the story does not end there.

It is all well and good measuring anything and everything to the greatest achievable accuracy but data only becomes valuable when it is processed into information. So now it is the point cloud software, and compatible CAD and GIS systems that are taking the strain. The millions, sometimes even billions, of individual measurements collected by laser scanners are contributing to the creation of a virtual world and are now a commonplace data type. This is leading to a fundamental change whereby users will no longer require specialist high-end solutions or expensive plug-ins. CAD and GIS – and BIM – software will read point clouds in exactly the same way as other types of data. Will that signal the onset of middle age for laser-scanning?



About the Author

Dr Graham Hunter is Executive Chairman and founding member of 3D Laser Mapping. With over Ten years' experience in the LiDAR industry he has led the development, sales and marketing of airborne and terrestrial laser mapping systems and was responsible for starting the distribution of Riegl laser instruments in the UK.



. . . fascinating uses of laser scanners include the development of driverless vehicles such as those in the DARPA Grand and Urban Challenges. . . a gyrocopter and even an autonomous golf cart!



conference report



This AGI event was facilitated by Peter Capell (left) and saw over 60 participants from the UK geospatial community.

Photos courtesy of Graham Vowles.

ON THE 9 FEBRUARY 2012, the AGI, in close collaboration with UK Location, held an outreach event focusing on the needs of data providers. The event was facilitated by **Peter Capell** of Informed Solutions and was attended by over 60 participants representing a broad spectrum of the UK geospatial community.

Balancing tensions **Ray Boguslawski**, the UK Location Programme Director, shared his thoughts on

integrating it into their own systems. **Peter Cotroneo** from Ordnance Survey is the technical lead on search and server technology. He explained that the preview tool supported 57 layers (varieties?!) of WMS. The preview tool is now similar to online shopping sites with a “shopping cart” facility. As an example, he quoted the reuse of hydrographical place names from the MEDIN network. However, the preview tool is still work in progress and there will be a whitepaper on positional

UK Location Data Providers Event

An outreach event attracted some 60 participants to hear the latest progress on the UK Location Programme and INSPIRE objectives. **Graham Vowles** reports for *GiSPro*.

data policy and strategy. He emphasised the close links of the UK Location Programme and the Open Data agenda. A “cross-cutting” approach is being used to facilitate the release of location information enabling easier access and to align with the Open Data strategies within central government.

An open data white paper will be published in early summer that deals with the fraught issues around charging for data or making it available free of charge. Another challenge is to balance the tensions between the needs and expectations of the Cabinet Office whilst supporting those of the Department of Business, Innovation and Skills, which is responsible for many of the government agencies operating as trading funds.

Review of 2011 – one small step for man. . .

Andrew Newman, Engagement Manager for the UK Location Programme, summarised the significant achievements of the programme, its partners and those publishing data to the UK Location Infrastructure over the last twelve months. The key targets for Discovery and View had been achieved just in time to fit with the programme and INSPIRE roadmaps. He concluded with a heartfelt “Big thank you” to all those within the UK Location community who had contributed to the technical achievements and to ensuring that the programme completed “a lot of complex stuff in a short timeframe”.

A preview tool for WMS registered within data.gov.uk – 57 varieties?

UK Location Programme, Ordnance Survey and Data.gov.uk have developed a preview tool for data.gov.uk. This tool enables data users to preview Web Map Services (WMS) registered with data.gov.uk in a simple map viewer. (Fig 2) It will help users understand the data before

accuracy issues to enable data providers to publish their data according to consistent reference systems.

Metadata validation – don’t take it personally

Peter Parslow of Ordnance Survey, standing in for the chair of the UKLP Data Specifications working group, described the progress made in publishing metadata. He highlighted a number of common issues that have been identified in metadata records and emphasised the specific requirements set out in the UK Location Application Profile of GEMINI 2.1.

In particular, he drew attention to the fact that licence information defaults to the Open Government Licence, which means that it is critical for data providers to specify any different licence information in their metadata records. He then described the rather pedantic mechanism used by the European Commission to validate metadata but explained that UK Location will be taking metadata validation more seriously in future. He emphasised that rejection messages should not be taken personally!

A Data Provider’s Experience – a steep learning curve

Miles Gabriel, on behalf of the Environment Agency and their team behind the Datashare Portal, spoke from a data provider’s perspective. He explained that the Agency conducted an “INSPIRE Shared Services Options Analysis”, which led to a collaborative approach, with Astrium Geoinformation selected to build the service based on the Geostore platform. They cross-checked the existing capability of the Datashare Portal with the INSPIRE regulations. The requirements not already covered were then specified in the procurement of additional functionality.

Miles explained that the delivery team focused on



Above: Peter Parslow, Ordnance Survey, highlighted a number of common issues that have been identified in metadata records.

Photo courtesy of Graham Vowles.

ensuring the delivery of an improved Datashare Portal that satisfied the INSPIRE technical requirements, and therefore complied with INSPIRE legal obligations. Currently 50 datasets are available, with a further 98 datasets being migrated. Access to the data is subject to a non-commercial licence, with charges for commercial use.



Instrumentation has been added to the system to check for compliance with the service performance criteria. The resulting Datashare Portal now provides a simple and elegant solution although it had been a big learning curve for the delivery team and Astrium.

Andrew Newman returned to look at the road ahead for 2012, with specific emphasis on INSPIRE Download and Transformation services. There is a general need for clearer guidance on data providers' legal obligations. Member States are still waiting for publication of the Download and Transformation Technical Guidance. However, UK Location will *not* be building any central transformation services. He reminded the audience that any *new* data which falls within the INSPIRE Annex I themes must comply with the INSPIRE Data Specification by December 2012, and that this year there would be a "real focus on quality improvement".

Open source software – other standards compliant software is available! Ian James, Chief Architect Information Systems at OS and Technical Architect for the UKLP, reminded everyone of INSPIRE deadlines for download services that start from July this year (See Fig 1).

He emphasised that download "is the first time your actual data will be exposed through the service". Direct-access download Web Feature Services (WFS) and pre-defined data download services may be implemented. The European Commission are working on the download technical guidance document which is expected to be published by the end of June. But Ian explained that download might be better described as direct access. Data providers may implement these services using Atom (a future proofed version of Really Simple Syndication) feeds or WFS which is the preferred INSPIRE approach. Some questions were raised regarding managing access and licensing of data provided by download services, and Ian recognised that not everyone is in a position to provide unfettered access to their data. It was also recognised that publishing data 'as is', in its current format, has limited value and it "probably made more sense to publish according to the INSPIRE data specifications as soon as possible".

Ordnance Survey is implementing INSPIRE services using the open source GeoServer platform, and is collaborating with IGN France to create a fully INSPIRE

compliant version of the software, which is expected to be publicly available in the autumn. However, he did say that this is only an option – other WFS products are available!

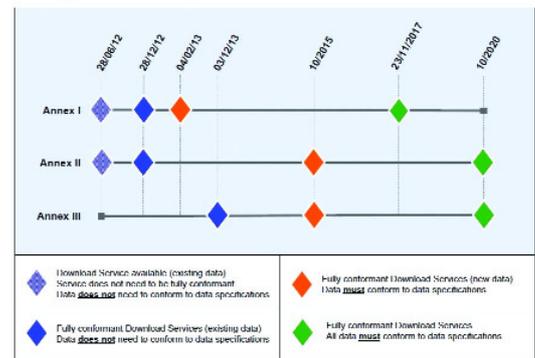
Peter Parslow talked through the work being done by the UK Location Data Specifications Working Group. This is being undertaken in parallel with the data.gov.uk initiative. General feedback on the data specification is that the language was too complicated, and the working group had a lot of comments to raise and some of them were quite major. An update to the INSPIRE Data Specification Implementing Rule is expected in October 2012.

Vendors' Stories Debbie Wilson of Snowflake Software Ltd gave her perspective as a member of one of the INSPIRE Thematic Working Groups. She presented a worked example using the Snowflake's GoPublisher and explained how the tool has been used to test data for INSPIRE Annex II and III themes. Her key finding was that mapping data to the INSPIRE themes does not take as long as everyone expects, and that the UK Guidance is a useful resource.

Matt Beare and **David Eagle** of 1Spatial gave an overview of the quality assurance process using Natural England data. Their advice to those adopting INSPIRE was not just to look at minimal compliance, but rather look at what INSPIRE can do for you and to collaborate and make use of domain experts when transforming data.

Summary So what did we learn from the day? Generally, there was a positive feedback from those engaged in the UK Location and INSPIRE implementation process. Whilst some may have been led reluctantly to the water, first tasting was not as bad as initially feared. Some organisations are taking advantage of the necessity to comply with the INSPIRE regulations, by using it as an opportunity to improve their internal quality assurance processes and this has led to wider business benefits. Other less tangible benefits have been improved levels of collaboration among data providers and key stakeholders including their customers and solution providers. The outlook was anticipation with cautious optimism; recognition of the challenges ahead; but realisation that UK Location and INSPIRE are travelling in the right direction.

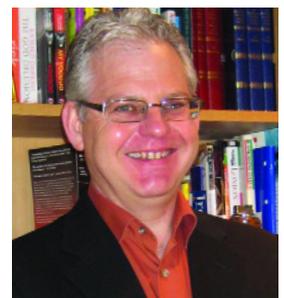
Implementation timeline



Above: Figure 1 – Ian James, OS and UKLP, reminded everyone of INSPIRE deadlines for download services that start from July and (above left) figure 2 shows the preview tool developed for data.gov.uk

Images courtesy of AGI and the UK Location Programme.

About the author:



Graham Vowles is Managing Director and Consulting Geospatial Architect at Bloxstore Limited. He is a recognised expert in licensing, rights management, geospatial standards and geospatial law, and supports the European Commission and other European organisations with strategic advice for the adoption of INSPIRE from both a legal and technical perspective.

case study MapThat



Above: "Find My Nearest" maps enhance residents' experience on the website, allowing them to pinpoint a location visually.

"They are a much valued partner who listen to our needs and work accordingly, staying engaged and keeping us informed throughout the website planning and development work. They really take ownership of the system they have developed before, during and after implementation." – Matt Spencer, Service Group Manager for Service Point.

A limited reporting capability and no map for residents to pinpoint exact locations visually. This was the conclusion that led the London Borough of Lewisham to completely redesign its website using a web-based visualisation tool. **Matt Spencer**, Service Group Manager for the council explains: "Our old website offered some

confident that a service request will have the correct location information for our operatives in the field. CADline's integration of the Local Land and Property Gazetteer (LLPG) with the Report-It platform has led to locations having unique records which can be selected by entering part of the address or by finding them on a map."

By improving the self-service platform, the Council is pointing customer contacts to the most appropriate channels in terms of speed, efficiency and cost. SOCITM have estimated that, on average, face-to-face contacts cost councils £7.40 as compared to £2.90 by phone and only £0.32 online! As compared to the previous website, Lewisham, with the help of CADline and other ICT partners, can now drive appropriate services through a much cheaper channel.

The new website is also far more intuitive and easier for residents to use. As a service request form is being completed, customers may be authenticated and address details pre-populated making the process quicker and smoother for the user, as well as eliminating many errors. Manual intervention is therefore greatly reduced and the outcome is a much faster turnaround. Each eForm generates an immediate automated response to the customer who can check the status of their report on-line at any time.

If the customer does not know the exact address

Lewisham maps the way ahead

The London Borough of Lewisham is the first local authority to use MapThat – a new web-based visualisation tool from CADline, reports **Robin Waters**. But Poole in Dorset is not far behind!

online forms but these just generated an e-mail after collecting basic information. But customers preferred to phone the call centre where reported address and location information was often inconsistent as it relied on the interpretation of both customer and operator. This naturally caused difficulties in the back office leading to expensive and time consuming call backs."

The Borough needed to overhaul the way they collected and processed residents' reports. They also needed a joined-up system offering a speedy and user-friendly service to encourage more online reporting. The aim was to create a full function self-service facility, which would reduce processing costs while simultaneously improving speed, efficiency and consistency.

CADline, developer of MapThat, was part of the project team that designed the new website (www.lewisham.gov.uk). The project required the integration of several information systems, including the Council's various existing databases, the Local Land and Property Gazetteer, Gandlake's intelligent eForms, and Microsoft's Dynamics CRM.

Matt Spencer and his colleagues are delighted with the result. "MapThat and the Report-It platform have made our website more valuable to our online customers. However, where telephone or face-to-face contact is still required it also enables staff to be

of their problem, they can now pinpoint it on a map – perhaps with the aid of overlaid aerial imagery – and confirm an address from the nearest records in the LLPG. "Recorded data is now in a consistent format; no time is wasted by our back office on interpreting what was meant," explains Matt. "The duplication of reports has also been dramatically reduced because users can see previously reported problems and do not then need to proceed."

MapThat also integrates all of Lewisham's directories so that users can view all the public places and services on the map by categories or all at once. Clarity is achieved with high resolution graphics, and navigation is rapid and easy. 'Hover-boxes' reveal the name and address of any pinpointed service.

Bespoke add-on CADline has also developed a bespoke add-on for Lewisham Council, called 'Rounds Application', to organise the refuse and recycling collection rounds previously managed in a separate spreadsheet that was not reliable or up to date. Now all the data is regularly updated and maintained so that refuse collection can be planned on the map with households selected by various elements of the address or within selected polygons.

Matt says his organisation has an "excellent"

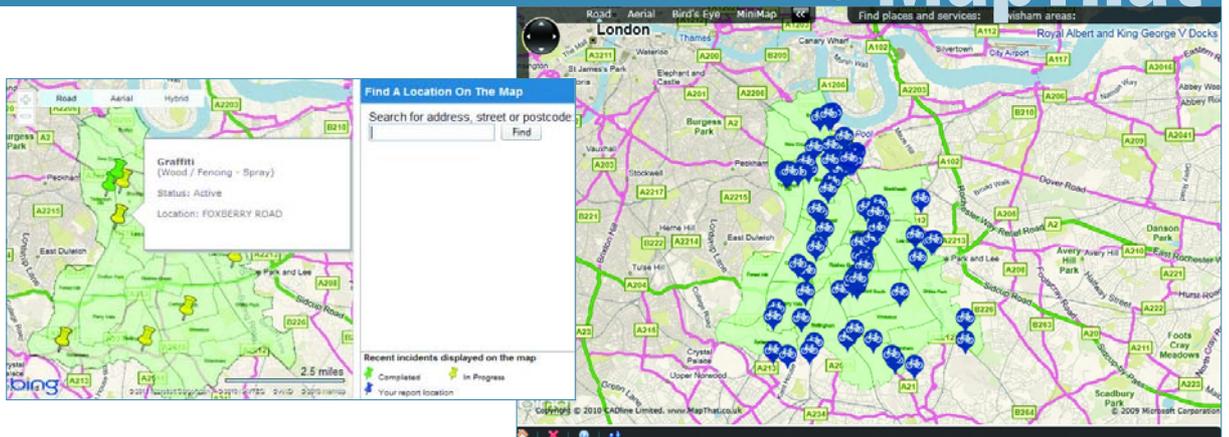


"Our old website offered some online forms but these only generated an e-mail to be sent to the back office after collecting basic information that the user would enter themselves."



case study MapThat

Right: Report It – if a customer does not know the exact address of a problem, they can pinpoint it on a map.



Above: MapThat integrates all of Lewisham's directories so that users can view all the public places and services on the map by categories or all at once.

business relationship with CADline staff. "They are valued partners who listen to our needs and work accordingly, staying engaged and keeping us informed throughout the website planning and development work. They take ownership of the system they have developed before, during and after implementation." Matt is now working with CADline to adapt the Rounds Application for streamlining the collection of large or bulky items of refuse, as well as establishing efficient catchment areas for respective services.

Adding to the pool Dean Pauley, GIS Officer at the Borough of Poole in Dorset, is at an earlier stage of development with MapThat. So far the concentration has been on an in-house application and therefore it is not available to the public. Dean says that they went for MapThat because CADline could provide a browser based system that still had all the necessary GIS functionality 'under the bonnet' while offering general users a simple user interface that required very little training. Since launching on GIS Day in November 2011, they have trained over one hundred users and now have many links into a variety of council databases. They are already seeing reduced map requests as the new system can be accessed online by employees. As with Lewisham, the team at Poole is

impressed with the close partnership with CADline and are already making their own connections to various internal databases. In the medium term they will be able to reduce the number of GIS licences being used and in the longer term hope to improve the service being delivered to the public.

As well as demonstrating the use of a modern browser based application for both internal and public use, CADline are also highlighting the very different stages in the development of location based services in different local authorities. **Richard Robertson**, business development director at CADline, is certainly not fazed: 'We think there is still a huge opportunity for putting local authorities 'on the map. ... we aim to help as many as possible with straightforward applications that are not yet universally accepted despite the efficiencies that are so easily achieved. Then we will take them forward to a much more customer oriented future where appropriate tools are available to residents, officers and members at the touch of a mouse'.

"MapThat and the Report It platform have made our website more valuable to our customers, by enabling self-service."



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Chris Holcroft is Director and CEO of the AGI.

AGI GEOCOMMUNITY is the largest and most comprehensive independent conference in the UK location data and digital mapping calendar. Catering for up to 600 delegates, the conference provides tangible insight and leadership in current geographic information and location based issues via a range of keynote addresses and conference papers, a show-case exhibition, as well as by hands-on training and face-to-face delegate networking.

The theme for this year's AGI annual conference is *AGI GeoCommunity '12 – Sharing the Power of Place*. The conference builds on the outstanding success of the AGI GeoCommunity format – it deals head-on with the challenges faced by – and tremendous opportunities available to – geographic information producers, consumers and innovators. It showcases how location can be at the core of successful service

Why? At last year's AGI conference we dwelt heavily on how the geocommunity places itself in the changing world and how we all make a contribution to positively managing the changes and challenges that our diverse sectors face. Returning to Nottingham in 2012, AGI GeoCommunity will once again focus on those key issues that impact our sectors of interest, but with a distinct emphasis on collaboration and sharing in our work to make significant beneficial impacts on the economy, in the environment, in governance and in society. For example, why does place matter? How does the understanding of place improve outcomes in activities that affect business, society and public administration? What are the new technology drivers out there? What are the current policy issues? How do we work together to make them effective? And in a year

Sharing the power of place

This year's AGI GeoCommunity conference will once again focus on key issues that impact our industry, says AGI director **Chris Holcroft**, but with an emphasis on collaboration and sharing to benefit the economy, environment, governance and society.

delivery and how new ideas can be made a reality. The event is already a 'must attend' for decision makers, practitioners and thought leaders from all aspects of the public and private sectors.

When? 19-20 September PLUS an 'icebreaker' event the evening before the conference on 18 September.

Where? East Midlands Conference Centre, Nottingham, UK. This is a purpose-built, modern conference facility based at the University of Nottingham. It is our second year there.

of large projects in the UK and beyond – not least the 2012 London Olympics – how is GI and the geocommunity making its mark?

Delegates will have access to the conference streams, keynotes, plenary sessions, plus exhibition, accommodation, food and refreshments, the AGI Party and entertainment, plus a range of competitions and other events throughout the event.

The deadline for Call for Paper Abstracts is 25 April 2012. For all information and on-line submission see: www.agi.org.uk/call-for-papers-2012.

The Conference Committee

- Jermiane Hutchinson – Environment Agency
- Nick Austin – LOCOG
- Will White – Esri UK
- Peter Yard – Pitney Bowes Business Insight
- Mark Percival – Individual Member
- Jeremy Morley – University of Nottingham
- Andrew Newman – UK Location Programme
- Emma Bee – British Geological Survey
- Maureen Nessling – AGI
- Carle Baxter – AGI
- Alan Wilks – AGI
- Claire Huppertz – AGI
- Chris Holcroft – AGI

How do I book? Online at the conference website (www.agigeocommunity.com). AGI uses the industry leading booking engine RegOnline. Please note that Early Bird places are limited.

Sponsors to date:

Esri UK, Ordnance Survey, GGP Systems, Leica GeoSystems, UNIGIS UK, UK Location Programme.

Right: The different conference prices for AGI GeoCommunity 2012.

Member Type	Delegate Type	Early Bird	Standard
Member	Full Conference (Including Icebreaker)	£380	£480
Non Member	Full Conference (Including Icebreaker)	£535	£635
Member	Full Conference (including Icebreaker) PREMIUM PACKAGE	£520	NA
Speaker	Full Conference (Including Icebreaker)	£340	£340
Member	Full Conference (Excluding Icebreaker)	£265	£322
Non Member	Full Conference (Excluding Icebreaker)	£375	£449
Member	Full Conference (Excluding Icebreaker) PREMIUM PACKAGE	£335	NA
Speaker	Full Conference (Excluding Icebreaker)	£210	£210
Member	1 Day Pass	£110	£145
Non Member	1 Day Pass	£160	£185
Student Member	1 Day Pass	£49	£60
Student Non Member	1 Day Pass	£69	£80
All	AGI Party Only	£50	£50

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Showing heat loss



Energy inefficient households in the UK are being pinpointed and directly targeted for improvement with a new thermal mapping service. Bluesky capture raw thermal survey data and process it into bespoke, targeted marketing material. Specialist thermal sensors mounted on survey aircraft record the heat loss from houses on cold, clear winter nights. Poorly insulated homes are identified and matched to the correct address and householders sent details showing how their house compares to others in the same street.

The latest commissioned surveys are being undertaken on behalf of a London Borough, the majority of local councils in Surrey as well as Rushmoor Council in Hampshire and an urban regeneration company in Northern Ireland. The thermal surveys will be captured by Bluesky using a 'microbolometer' thermal camera; a system specifically designed for airborne surveying and ideal for use in aircraft flying at night. Combined with an advanced navigation and positioning system and improved sensor control and user interface, the new generation thermal mapping system allows measurements of heat loss from property roofs to be recorded with higher precision and more consistent results.

Technology Days UK and Ireland Trimble dealer KOREC is to hold three Technology Days. The London event will be on May 22 at One Great George Street in London, home to the Institution of Civil Engineers; Belfast event, 10 May at The Culloden Estate & Spa; Dublin event, 15 May at The Carton House Hotel. The theme is 'Innovation' and KOREC and Trimble's technical experts will provide updates on new technology for surveyors, engineers, GIS and geospatial professionals. Two breakout 'Get the Know How' Q & A sessions are included so delegates can discuss developments and featured technology like the Faro Focus3D laser scanner and Sensefly's SwingleCAM. These all-day events are free of charge. Register at www.korecknowhow.com.

Juno update from Trimble



New GNSS handheld devices designed for GIS field applications have been launched by Trimble. The Juno 3B and 3D offer mobile users rugged handhelds with typically 10 hours battery life, IP54 environmental protection and improved sunlight-optimised screens. The Juno 3B has an integrated GPS, a 5 Mpx autofocus camera with flash and Windows Mobile software. The Juno 3D adds 3G wireless technology allowing users to transfer data faster and stay connected to the office with an integrated mobile phone.

Breakthrough in image analysis

A breakthrough in automatic analysis of aerial images with computer stereo vision is claimed by German company GTA Geoinformatik GmbH. The development allows automatic 3D object reconstruction without help of any 2D map data. Although only a prototype, the new version of tridicon software enables the detection of 3D objects like buildings without the need for 2D vector data (e.g. building outlines). The only source material that needs to be available for the automatic 3D object reconstruction are stereo aerial images.

Bluelight in UK

Symphony Bluelight, an emergency service gazetteer management system from Aligned Assets, has been formally released to the UK market. After four months of development work and a successful live deployment at Hampshire Fire and Rescue Service, all police forces, fire and ambulance services can integrate the Ordnance Survey's AddressBase Premium into their frontline and back office systems.

Combining a corporate gazetteer management system, web services, data matching software and ability to automate updates to other systems, Bluelight addresses the specific needs of emergency services. It enables them to hold AddressBase Premium, import change-only updates, build in and maintain local records, add access points, security classifications and high priority flags to addresses, plus incorporate a customisable list of abbreviations to make searching data more user-friendly.

GeoConcept updates

MapMechanics' GeoConcept v7.0 has launched in UK with a touch-screen capability for tablet PCs and mobile devices. Features include 3D mapping; extended compatibility with third-party data and map file formats; and new options for outputting and sharing maps and geographic analysis.

This version is better at handling thematic mapping that incorporates

multiple visual items (e.g. labels or legends), managing their size and placement intelligently so users can group and sort on the basis of numeric fields as well as text.

File importing: data can be read from files in formats like Microsoft's .XLSX (Excel spreadsheet) and .ACCDB (Access database). V7.0 is also compatible with the geometries of Microsoft SQL Server 2008, PostGIS 1.5 and Postgres SQL 9.0.

A Windows 7-style interface features the "ribbon" top menu bar similar to those in Microsoft's Office 2010 products. This groups together links to many related functions, keeping them in view at all times.

BRIEFS

Online resource, allmapdata, has launched for organisations buying digital map data and related information such as business data and demographic data. Developed by MapMechanics, it can be viewed at www.allmapdata.com.

Sterling, the software division of Sterling Power Group, has been appointed as distributor for Intergraph's geospatial product families, ERDAS and GeoMedia in Great Britain.

SaaS-based GIS software specialists eSpatial is offering a selection of US and UK census data to its customers and users as a free trial.

Faro SCENE 5.0 is a point cloud capture processing software for the Focus3D laser scanner. Users can view scans in true stereoscopic 3D, use automatic fine registration eliminating the need for artificial targets in many cases when piecing together multiple scans, and a new Project Database enables enhanced levels of networking between users.

Blom's Desktop Viewer v3.2 includes enhanced functionalities such as access to the spherical imagery of BlomSTREET and high resolution LiDAR models plus integration with the Cyclomedia API.

| 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 or e-mail: hayley@pvpubs.demon.co.uk.

2012

SPAR International 2012

15-18 April, The Woodlands, Houston, Texas, USA.

More information: www.sparpointgroup.com/International/

Geospatial World Forum

23-27 April, Amsterdam, The Netherlands.

More information: www.geospatialworldforum.org

Esri UK Annual Conference 2012

15 May 2012, Wembley Stadium, London, UK.

More information: www.cvent.com/events/esri-uk-annual-conference-2012/event-summary-d2b9f397f93f47309efe6cf2ce99bf23.aspx

32nd EARSeL Symposium – “Advances in Geosciences”

21 - 24 May, Mykonos Island, Greece. More information:

www.earsel.org/symposia/2012-symposium-Mykonos/index.php

4th International Workshop of the EARSeL Special Interest Group

24 - 25 May, Mykonos Island, Greece.

More information: www.earsel.org/SIG/Geology/workshop.php

SPAR Japan

5-6 June, Kawasaki Industry Promotion Hall, Kawasaki, Japan.

More information: www.sparpointgroup.com/Japan/

Geo Maritime 2012

13-14 June, London, UK.

More information: www.wbresearch.com/geomar/home.aspx

The British Cartographic Society Symposium

13-15 June, Barceló Basingstoke Country Hotel, Hampshire, UK.

More information: www.cartography.org.uk/symposium

GI Forum 2012

3-6 July, Salzburg, Austria.

More information: www.gi-forum.org

12d Model International User Conference 2012

29-31 July, Brisbane Convention & Exhibition Centre, QLD, Australia.

www.12d.com/aus/community/12d-model-international-user-conference-2012/

AGI GeoCommunity '12: Sharing the Power of Place

18-20 September, East Midlands Conference Centre, Nottingham, UK.

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



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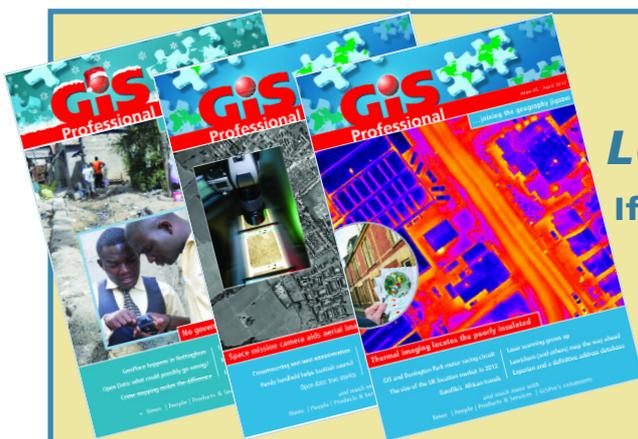
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