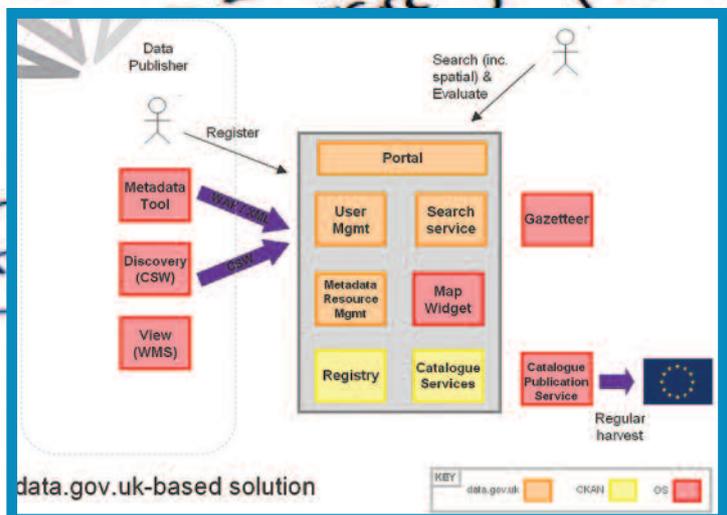
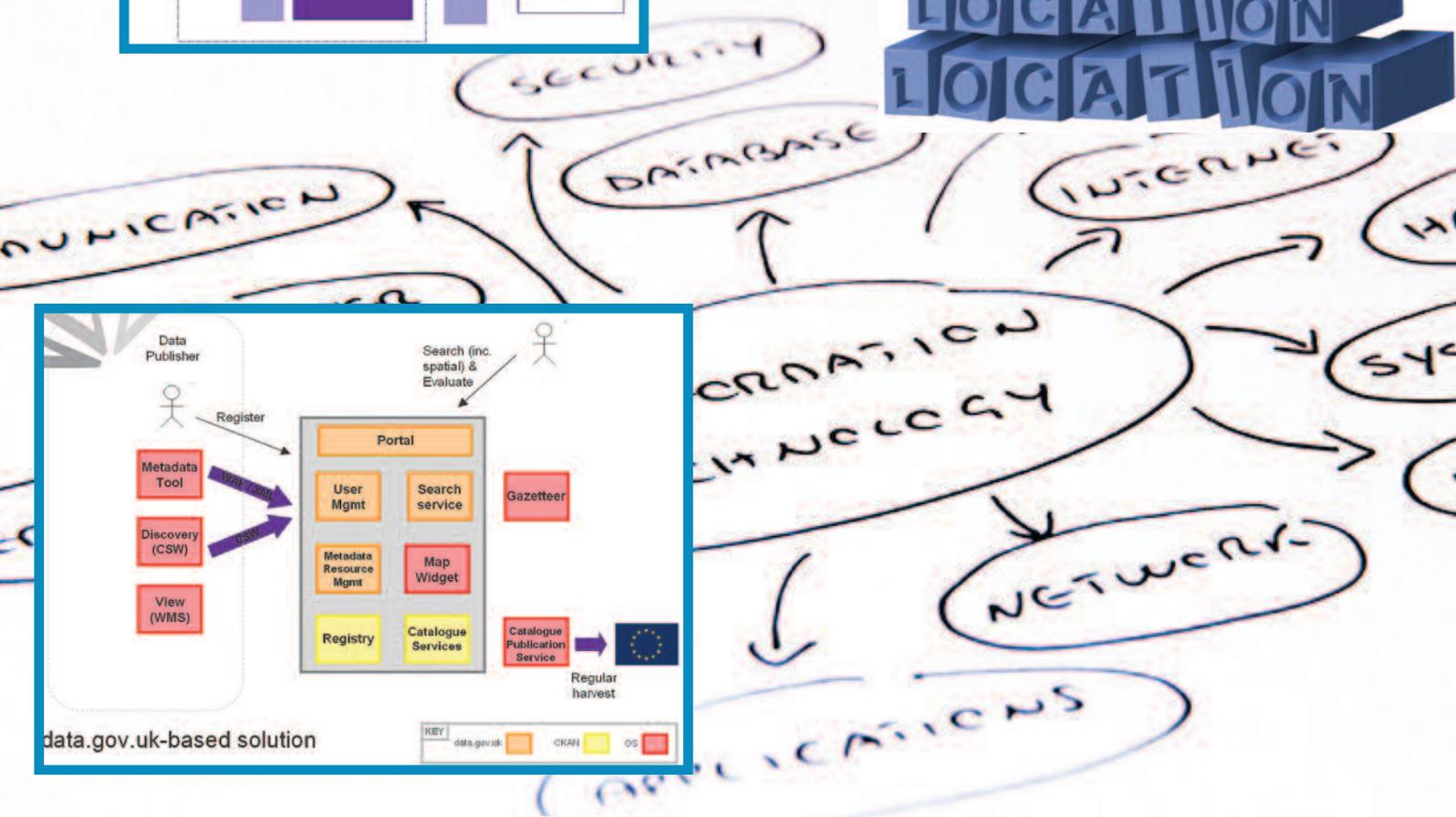
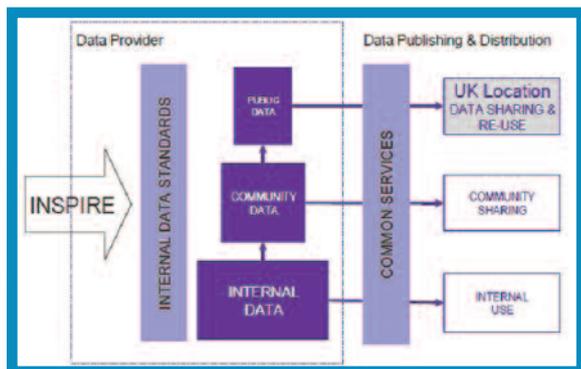


# GIS Professional

issue 35 : August 2010

... joining the geography jigsaw



## Location Programme warms up

OSM attracts the big boys but rules the slums  
 Data abundance but watch the wrapper  
 Inspired by a Polish salt mine

Keeping track of open source licences  
 Wireless and changing data capture methods  
 AGI's GeoCommunity in a changing world

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*Printing:* The Manson Group, St Albans

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## Location programme warms up

Progress on the UKLP is steaming ahead but there is plenty still to resolve, says Robin Waters.

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## OSM – this could get serious!

There were some startling surprises in store at the recent OpenStreetMap conference in Spain, as Steven Feldman discovered.

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## Field data capture – who dares, wins!

Korec's Andrew Beckerson looks at wireless advances in this technology, concluding that the economic climate makes it an obvious choice.

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## Data abundance – dawn of a new era?

James Cutler, emapsite, analyses the winds of change blowing through GI – but will the impact on our domain be welcome?

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## GiSPro Interview: Simon Doyle

So why attend AGI GeoCommunity'10 when budgets are stressed? The conference chair explains why it really is a "must attend" event.

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## AGI GeoCommunity'10 Sponsor Preview

With many of the industry's leading players sponsoring the event, confidence in the AGI's ability to pull off another winner is clearly high.

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## Web 2.0 meets location

Less off the wall and some good new acts was how Andy Coote found this year's Where 2.0 event.

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## The cost of open source licensing compliance

Open source software can be seductively free but still be costly if licensing restrictions are infringed, says Kamal Hassin.

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## Talking about maps

In June, the Editor joined cartographers during their annual symposium to learn that there's rather more to maps than eye-catching prints.

### > GISPro's COLUMNS

- p.13 **Adena Schutzberg** – Is anyone prepared to predict the future of GIS?
- p.26 **Eurofile** – Our correspondent finds the INSPIRE'10 conference "cloudy"...
- p.32 **AGI Column** – Get a flavour of what's happening in the world of the AGI.

### > GISPro's STANDFASTS

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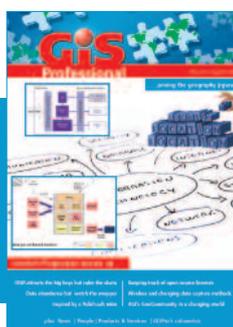
**Next Issue: October 2010**

Copy dates **Editorial:** 2010

**Advertising:** 2010

**Front cover:** Plenty of challenges lie ahead for the UK Location Programme including how all these aspects will mesh together.

Location, Location, Location image © Jamie Roach | Dreamstime.com



*For details of subscriptions, please turn to page 38.*

# read on...



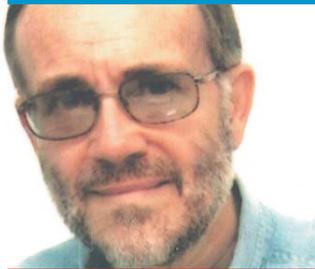
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welcome  
to the August issue of *GIS Professional*. . .

## Monetising remains the challenge

In the brave new world of free public data heralded by Gordon Brown and Sir Tim, little thought was given to exactly how that data would actually be used, let alone what affect it would have on software suppliers or commercial data suppliers.

A recent posting by **Thierry Gregorius** on Twitter says that his company, Landmark, has analysed government datasets available for free and nearly 85% come without any meta data. One wonders if the holders actually know what meta data means and its significance. Indeed, the cynical might say, as **James Cutler** suggests (page 19) that only political expediency was served by the previous government's initiative. As James observes, "The trick that intermediaries, such as the PBBI Data Market initiative, must pull off is to add value to the building blocks up to a point at which their market place wishes to take over and add its own value. There are those in these markets who will revert to the data producer but for many the focus on core expertise means that it is cost-effective and expedient to seek out others for whom geospatial data provisioning is their core focus." James's article provides a clear analysis of where we are and charts a path ahead of where the opportunities are for users, software suppliers and the geospatial knowledge base.

Kracow, Poland was the scene for a major conference on Inspire, the EC initiative that seeks to harmonise spatial data across Europe. Whilst this was a vibrant event, most experts operating in the field of spatial data infrastructure recognise that if Inspire doesn't deliver or falters there are a growing number of alternatives out there, at least for non-critical applications. Inspire certainly helps to raise awareness of the importance of GI. But for those already ahead of the game, crowd sourced data together with cloud computing may yet fulfil their needs.

Meanwhile OpenStreetMap is beginning to attract attention from some mighty big players, as **Steven Feldman** discovered when he attended The State of the Map conference. He also reports how OSM is being used to map Nairobi's sprawling slums, hitherto uncharted. Apart from teaching youngsters marketable skills, accurate mapping is the cornerstone for planning, development and property ownership. Don't miss Steve's report on page 14.



**One wonders if the holders actually know what meta data means and its significance.**



In this issue we also preview AGI GeoCommunity'10 including an interview with Conference Director **Simon Doyle**. This year's event takes place against the backdrop of significant changes in the market for GI. The availability of free datasets, software as a service together with the expected cutbacks in government spending means that the business case for GIS will have to be even more watertight. On the plus side the Inspire directive and the UK Location Council (see **Robin Waters'** update on how busy the Council has been, page 10) will raise awareness and act as a catalyst for many organisations. As Simon says, "Data fuels decisions – embrace it as an asset."

Finally, don't forget to check out Korec's feature on data capture and the increasing influence and opportunities that wireless offers for remote working. There is also a report of the BCS Symposium, "Talking with Maps". Cartographers and GIS specialists need to look more closely at each other's work; both are skilled disciplines from which the other can gain useful knowledge. And last of all, don't miss **Andy Coote's** report from the leading edge Where 2.0 Conference. Andy found signs of a maturing geoweb and less insularity from mainstream geospatial; but how and who can successfully monetise the geoweb, remains the challenge.

Stephen Booth, editor

## Mapping solar potential



Bluesky is developing maps of solar energy potential for the UK. Created using various height data, the 3D maps will identify homes and other buildings with roofs that may be suitable for mounting solar panels to generate renewable energy. The company already has access to off-the-shelf data for the UK and measurements such as the shape, pitch, size and aspect of building roofs are being extracted. 'Using data that is already available online at [www.bluesky-world.com](http://www.bluesky-world.com) we can create citywide maps of solar energy potential. We believe this is the first time this has been done in the UK and we are following in the footsteps of cities like New York, San Francisco and Boston,' says Rachel Tidmarsh, managing director.

## Intergraph acquired

In a surprise move, Hexagon AB has announced that it is to acquire Intergraph in a US \$2,125m deal. The US software developer, which also has a hardware arm that produces a digital aerial camera, will add to Hexagon's growing portfolio of companies offering measurement and spatial data capture technologies, which includes Leica Geosystems. How the move will affect Leica's digital aerial camera offering remains to be seen but it is interesting that Hexagon also owns

GeoMax, a surveying instrument manufacturer that offers total stations and other equipment that may compete with Leica in some markets.

Completion of the Hexagon purchase is subject to regulatory approvals and other customary conditions. Regulatory clearance is expected to take approximately two to three months. Under the terms of the agreement, Hexagon will pay a cash purchase price on a cash and debt free basis. The transaction is expected to be "earnings accretive" as from closing and should

generate cost and sales synergies, including new product launches.

## NLPG & NSG awards

Intelligent Addressing and Local Government Information House will jointly present the 2010 NLPG and NSG Exemplar Awards at a one-day conference and exhibition 'Everything Happens Somewhere', to take place at Cutlers' Hall in Sheffield on 20 October 2010. The awards recognise the innovation, effort, commitment and achievement of local authorities, police and fire services in the creation, maintenance and utilisation of the National Land and Property Gazetteer and the National Street Gazetteer.

## Technical guidance finalised

The EU's Joint Research Centre (JRC) has published the second draft of the Technical Guidance for Schema Transformation Network Service (TNS). With comments now received from community review, revision work has begun and, at the time of writing, the final version is expected by the end of July. The technical guidance constitutes the main deliverable within the scope of work for the EC JRC Contract Notice 2009/S 107-153973, as awarded to RSW Geomatics, 1Spatial and Rob Walker Consultancy in October 2009. At the recent INSPIRE Conference in Kraków (see page 26), a team from 1Spatial and RSW Geomatics showcased a prototype demonstrating the feasibility of the technical guidance. This highlighted the possibility for vendor neutrality based on W3C and OGC standards for model mappings and schema

description respectively. The prototype demonstrated how the guidance could be used to deploy a transformation solution based on open source components and commercial offerings, working in an interoperable way, based around rigorous standards.

## Take up the GeoVation challenge!

The 2010 GeoVation Challenge will ask entrepreneurs, developers and community groups to use geography to address three challenges. The first is "Can Britain feed itself?" – geography can play a key role in helping people connect to locally produced and sustainable sources of food. The challenge will run from 16 June to 3 September (12 noon), and shortlisted ideas will be invited to a weekend GeoVation Camp where teams will develop selected ideas into prototypes of basic working models of new ventures. There will be an award for the idea team(s) that makes the best use of Ordnance Survey's OpenData. The second and third challenge will be announced later this year. To register, visit [www.geovation.org.uk/geovationchallenge/](http://www.geovation.org.uk/geovationchallenge/)

## CONTRACTS & PROJECTS

### Welsh contract for Bluesky

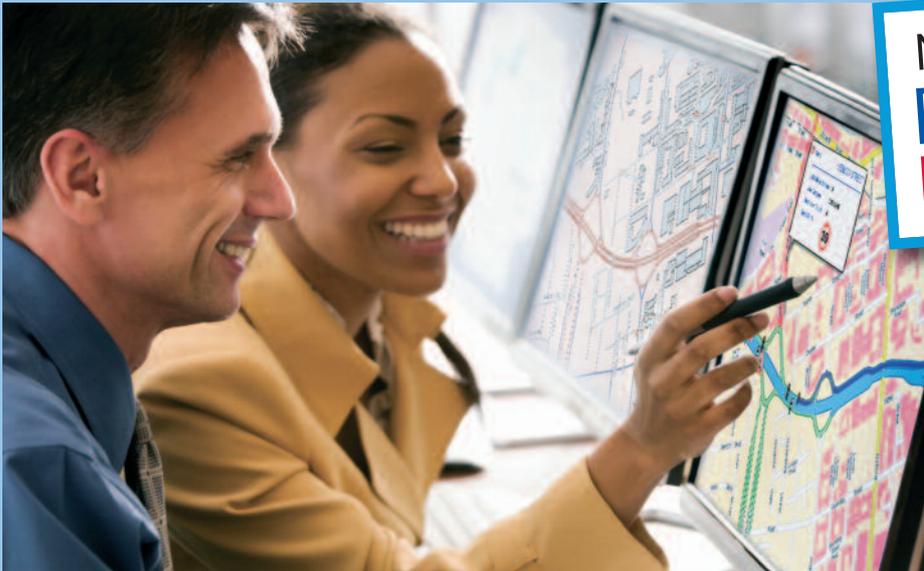
Bluesky has won a framework contract with the Countryside Council for Wales (CCW). The contract covers the provision of a range of data capture, data conversion and cartographic services to support the council in its role as statutory advisor to the government and will run until 2014. These services include traditional RGB photography for mapping and site surveys, infrared imaging to help assess the health and state of vegetation and LiDAR mapping for high accuracy height modelling. Bluesky may also be called upon to create digital index maps for existing aerial photographs and provide georeferencing and scanning services to the council or its partners.

## Service for residents



Birmingham City Council has given its citizens quick online access to interactive maps and details about local services and activities. The 'My Local Information' service sits on the recently re-launched [www.birmingham.gov.uk](http://www.birmingham.gov.uk) website. Residents can search for an address or postcode to find local facilities such as nearest school, local Councillor and MP, waste collection days and recycling facilities. The service is powered by ESRI UK's LocalView browser-based knowledge-sharing application. The launch of citizen-facing GIS follows the council's internal adoption of ESRI technology to replace an integrated property management system (IPMS).

# Spot the difference!



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### SPOT THE DIFFERENCE Boundaries

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

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

**Originator's raw data** boundary names are joined together (e.g. Welsh and English names, or name of constituency plus type of boundary) – long and difficult to view at all scales.

**MapMechanics processed data** retains all the information, but also provides it in separate fields for faster, easier labelling in your preferred language and format.

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

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



### SPOT THE DIFFERENCE Rasters and Postcodes

**Originator's raw background** raster data is provided as individual tiles so each one must be imported and registered separately.

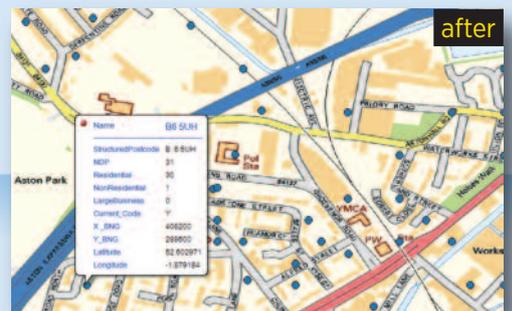
**MapMechanics processed data** includes seamless coverage, loading all together so there are no gaps in the background of your map.

**Originator's raw data** postcode points to position your own data on the map includes only the latest postcodes so if your customer gives you an old postcode it will not appear.

**MapMechanics processed data** is designed to geocode as many records as possible. With each release, we add the new postcodes to the previous ones and supply a complete file with modern and historical postcodes included. So, for example, even out-of-date customer addresses can be mapped.

**Originator's raw data** postcode information does not include delivery points data in an easy-to-use form as standard.

**MapMechanics processed data** includes separate information fields for residential, business and large users, so you can quickly calculate market penetration by dividing the number of consumers you have in your customer base by the number of residential delivery points, for example.



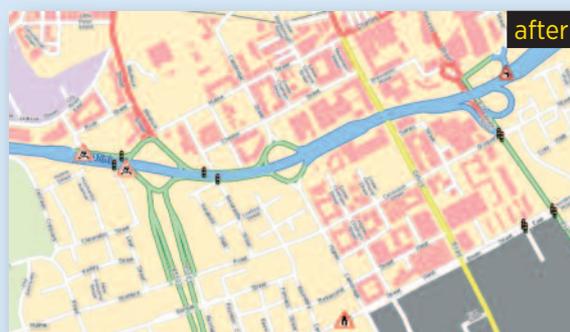
### SPOT THE DIFFERENCE Vector maps

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

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

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

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



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## OnDemand now in demand

Hampshire Fire and Rescue Service (HFRS) has implemented the OS OnDemand web map service. They are accessing Ordnance Survey's service by utilising functionality available in OpenWINGS, the brigade's GIS supplied by software developer, Innogistic. 'Accessing OS OnDemand through OpenWINGS means that we can reduce our reliance on the costly data storage infrastructure we have been using,' says John Hinton, risk intelligence data manager at HFRS.

## GIS for Paribas

MapMechanics has supplied BNP Paribas Real Estate with the GeoConcept EnterpriseGIS, plus a range of map data from NAVTEQ, Ordnance Survey and the AA, along with Census data and access to Microsoft Bing aerial mapping. The independent real estate advisory business can now provide clients

with geographical-based analysis and planning support.

## Recording ancient woodland

The GeoInformation Group has won a contract with the Forestry Commission, the Countryside Council for Wales and the Woodland Trust to revise the ancient woodland inventory in Wales and to create an inventory of Wales' wood pasture.

## Improving environmental monitoring

The SWIMA project (sensor web for infrastructure management) is using live field trials in the River Tamar catchment to demonstrate how the use of the Open Geospatial Consortium's international sensor web enablement (SWE) standards can improve environmental monitoring capabilities. Supported by the Technology Strategy Board,

the two-year £900,000 project involves a QinetiQ-led consortium, which includes: 1Spatial Group, the Environment Agency of England and Wales, South West Water, YSI Hydrodata Ltd and the University of Nottingham's Centre for Geospatial Science. 1Spatial is specifically responsible for the design and development of a number of "SWE Nodes", based on their OGC-compliant sensor control and access resource (OSCAR) software. These nodes interface to in-situ sensors deployed in the Tamar catchment.

## Adopting the NLPG

The Welsh Assembly Government is to license the National Land and Property Gazetteer as its source of property information for planning applications.

The Department of Energy and Climate Change has also opted to license the NLPG as part of its National Energy Efficiency Data framework, a project that aims to provide property-level information on building energy use and performance.

## Scottish road works

The contract for providing the Scottish Road Works Register (SRWR) service for the next five years has been awarded to Symology, a supplier of street works register systems. The scope includes a fully hosted service for the national centralised road works register, including electronic notification and integrated digital mapping. Plant information requests and a "dial before you dig" service are also included. The contract includes options to extend the service both to allow exchanges of data in real time between SRWR and individual works management systems and to provide a centralised electronic records service for all underground apparatus.

## Addressing the litter curse

AXESS West Sussex, a partnership of county, district and borough councils, is combining online maps, SMS text messaging and handheld

mobile devices to help tackle fly tipping and litter in Crawley. The National Land and Property Gazetteer (NLPG) is at the heart of the project, which is designed to help communication between the community and council through the use of readily accessible technology. By streamlining the flow of data received by the council, it can be automatically directed to the relevant service provider.

## BRIEFS

The British Cartographic Society (BCS) award was presented to The Highland Council at the 2010 awards ceremony held at the society's recent annual symposium, "Talking with Maps". Also, the Highland Council's OS MasterMap-based map showing Inverness city's main developments in 2010 won Ordnance Survey's "Better Mapping" award at the symposium. For more on the event and award winners, turn to page 34.

**The Crown Estate has received a special achievement in GIS (SAG) award at the 30th annual ESRI International Users Conference in San Diego, California. The award recognises the Crown Estate's use of the company's GIS technology in mapping the potential of UK waters for marine renewable energy using its marine resource system (MaRS) spatial planning tool.**

A new website, plaqueguide.com, allows users to search for people commemorated by official plaques in London to pinpoint the plaque's location and read related biographical and historical information. The use of Google's StreetView means users can also 'step into the map' to see the plaque in its real-life environment. The website has 230 of the city's plaques but the site's creator, David Coughlan, is now asking the public to help him complete the rest.

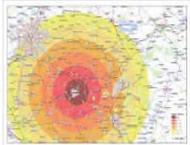
**Infoterra has launched a new geographical software business**

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unit, Symetri Geo, focused exclusively on the resale, distribution and provision of technical and training support for the company's portfolio of third-party geo-software products.

Process Promise is a new scheme developed by MapMechanics to assure users that the geographic and demographic data it supplies is properly prepared and formatted to display and perform correctly in their chosen environment. The quality assurance scheme aims to help users distinguish between data offerings and easily identify which products are "raw data" and which are "ready-to-use".

Star Net Geomatics, a customer of Leica Geosystems, has won an award for 'wireless network infrastructure innovation' at the Global Telecom Business Awards in June. The award recognises the success of a project undertaken for the company's client, Arqiva, who are using Star Net's asset management tool, isite, which brings the fieldwork of managing infrastructure to the desktop.

Business efficiency software supplier, Postcode Anywhere, is among the first UK companies to be accredited with the ISO 27001 international

standard for data security. The standard outlines best practice for an information security management system (ISMS) and sets requirements for data protection.

**Exprodat Consulting has signed a partnership agreement with ESRI UK to provide GIS training courses aimed at the exploration and production (E&P) departments of oil and gas companies. More at: [www.esriuk.com/trainingevents/training/trainingPetroleum.asp](http://www.esriuk.com/trainingevents/training/trainingPetroleum.asp).**

Forth Valley GIS has gained certification with the International Quality Management System Standard ISO9001: 2008 for the provision of geographical information services.

**Home Instead Senior Care, a franchise specialising in non-medical care for older people in their homes, has improved its system for defining franchise areas in the UK by introducing the GeoXploit from MapMechanics. Using census data, Home Instead is able to cross reference demographic data with postcode sectors and administrative boundaries, creating territories that contain the target population of older people and avoid straddling administrative boundaries.**

## RGS honours Dangermond



ESRI founder, **Jack Dangermond**, has been awarded the Royal Geographical Society's Patron's Medal. Approved by Her Majesty The Queen, the citation is for the extensive work promoting geographical science and his role as a main driving force in the development of the GIS industry. Receiving the award from RGS president, Michael Palin, Dangermond paid tribute to the many colleagues and ESRI employees who had helped build the case for GIS or 'computational geography' as it was first called.

## MBE honour



**Peter Woodsford** has received an MBE for his services to the

geographic information industry in the Queen's Birthday Honours list. Woodsford's involvement in the GI industry began with Laser-Scan, (now 1Spatial). He retired as chairman there last year but continues as chairman of Snowflake Software. He has also held several high profile positions including chairman of the AGI in 1991 and business development representative on the Open Geospatial Consortium.

## Student of the year



**James Cheshire** has won the ESRI/University College London development centre student of the year award for his GIS research into the spatial distribution of families' via their surnames. He was presented with his award by ESRI president Jack Dangermond. Using UCL's surname database, spanning 26 countries, he began researching how surnames originally linked to careers, such as "Smith" (traditionally associated with the blacksmith trade) have been affected by migration trends.

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# location strategy



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

SO, GORDON BROWN HAS GONE and Britain has a new government. And not just any government but a coalition, the first since 1945. What will this mean for the GI industry, the Location Strategy and the unfinished business of reforming the Ordnance Survey and its myriad datasets? It's probably too early to say with any certainty but it's worth looking at what was in the manifesto of the coalition's senior partner (the LibDems were strangely silent on this topic).

#### From the Conservative manifesto:

*Drawing inspiration from administrations around the world which have shown that being transparent can transform the effectiveness of government, we will create a powerful new right to government data, enabling the public to request – and receive – government datasets in an open and standardised format. Independent estimates suggest this could provide a £6 billion boost to the UK economy. We will open up Whitehall recruitment by publishing central government job vacancies online, saving costs and increasing transparency.*

The LibDems would surely also back this strategy so, are there nay flies in the ointment? Well not

Rumour has it that the coalition government ethos of cooperation and consultation is spreading down through Defra and may even have reached out to agencies such as the Ordnance Survey.

**Question 1** – which organisation is responsible for the implementation of the UK Location Strategy?

**Answer:** Any organisation which holds spatial data for, or on behalf of the public, is responsible for making that data available, and in a standard format, for viewing and use by other organisations and by the public.

**Question 2** – Which Government department is responsible for the co-ordination of the UK Location Strategy?

**Answer:** Defra is the lead department for the UK Location Programme (UKLP), but the Programme itself is a pan-government collaboration set up to help to coordinate implementation of both the UK Location Strategy and the EU INSPIRE Directive. The UK Location Council was established to direct and advise on how the Programme is taken forward.

## Location Programme gears up

Co-operation and consultation are the order of the day under the new coalition government. With FAQs and guides published, the UK Location Programme is steaming ahead. But there is plenty still to resolve and sort out, says GiSPro's **Robin Waters**.

quite a fly, indeed someone who is anything but a flyweight and might indeed get us into a pickle. The new secretary of state for Communities and Local Government (under which the Ordnance Survey, the Location Strategy and all things GI fall) is Eric Pickles. The living personification if ever there was of a bluff Yorkshireman, Pickles alas is on record I am informed for having criticised what is now his own department for having advertised for a "Location Specialist". We have even heard him decry the employment of a 'Street Naming and Numbering Officer' so he may remain to be convinced. Work to be done there then.

His junior minister, Mark Field, is directly responsible for Ordnance Survey and recently answered a parliamentary question: "The Government are continuing to think carefully about the Ordnance Survey's public task and will inform the House when a decision is made". No change there!

However, just like the summer (as of the end of June) the UK Location Programme is warming up.

On the UK Location site <http://location.defra.gov.uk> there is now a regularly updated set of FAQs with answers to many of the questions that curious individuals and organisations have been asking since the INSPIRE Directive came into effect in May 2007 and the UK Location Strategy was published in December 2008.

It is made up of representatives from all the key stakeholder organisations. The Council oversees the delivery of the work of the Programme.

UKLP team works closely with the devolved administrations of Wales, Scotland and Northern Ireland – which also form a part of the implementation programme, and are represented on the UK Location Council.

And no sooner had the FAQs appeared – with a list of likely data providers that changed almost as fast as the Education Minister's list of schools – than four new 'Getting Started Guides' were published – with more to come.

It is clear that we are stuck with the uniquely British 'UK Location Information Infrastructure (UKLII)' – which could be pronounced to rhyme with 'ugly'. The guides admit that this would be known in the rest of the world as a National Spatial Data Infrastructure, but I guess we have to be different! Anyway these Guides are a pretty good start at explaining what needs to happen and why.

GSG-1 gives some general background on the Location Strategy; makes clear that it is aimed at Data Providers (and draws a distinction between their role and that of Data Publishers – see Fig1); explains what UKLII will do; and points to further

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**... these Guides are a pretty good start at explaining what needs to happen and why.**

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guidance from the UK Location site itself or, if relevant, from the devolved administrations and the Local Government Association. It also gives a peep 'under the bonnet' with an explanation of Web Services and a search term "inurl:REQUEST=GetCapabilities" that will take you into the realms of the Geoweb. (try it!)

UKLII aims to provide access to machine-readable location resources (aka geographic information) – which may or may not be used to produce maps – but which can certainly be used for a variety of public and private sector applications. It also, to encourage participation, suggests this is 'where you give a little and gain a lot' – because most data providers are also users of other datasets.



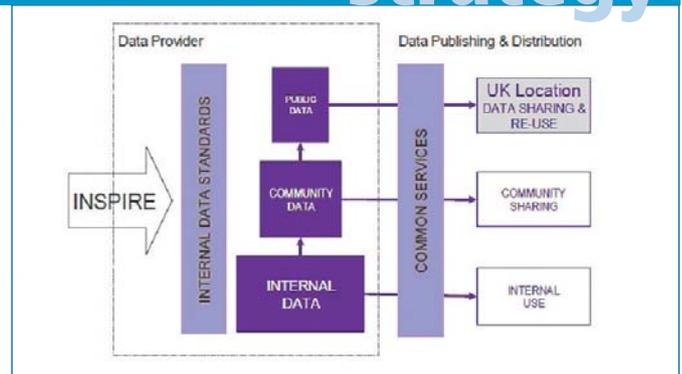
**Figure 1: Data Providers and Publishers – spot the difference.**

**GSG-2 'Organisation and Data Coverage'** states that public authorities (as defined in the Environmental Information Regulations 2004) are legally required to contribute location data – others will also be encouraged to do so. Location information is defined to include all digital 'vectors' (points, lines, polygons); 'rasters' (including satellite or aerial imagery and terrain models) as well as 'text' (alphanumeric) data that includes coordinate references. It excludes pdf files. So the question is: does it include all datasets with addresses? Apparently not unless they are explicitly geocoded as in a gazetteer. However the INSPIRE regulations state that even 'indirect' references to spatial data are included. Scope for some disagreement perhaps?

**GSG-3 'What needs to happen and when'.** UKLP has a Phase I – for existing datasets – and a Phase II for INSPIRE compliant information. Phase I deadlines run from December 2010 when metadata for existing data in Annexes I & II should be made available to December 2013 by which time all datasets need to be available for download. Phase II runs from June 2012 – when all Annex I datasets need to be published in INSPIRE compliant form, to May 2019. All milestones are tabulated in the Guide with details of when various INSPIRE performance criteria also kick in.

**GSG-4 'Publishing Discovery and View Services'** is a much longer document laying out suggested roles of Data Providers and Publishers in six stages – Strategic Planning; Operational Planning; Data

**Figure 2: Decisions on what to publish to whom.**



Publishing Capability; Publishing Discovery Metadata; Publishing View Services; and Maintaining published data and services. It is clearly important to establish exactly which data is being made available internally; within a closed partnership; or to the public in general (see Fig 2). At this stage the Guide raises issues of rights of access and reuse; IPR in general; and derived data in particular with references to The National Archives for further information. There are still some licensing and charging issues to be sorted here.

There is then a very open discussion of publishing – what it means, who should do it and what has to be done. To quote: "Publishing Metadata and View Services is fairly straightforward. Publishing Download and Transformation Services is considerably more complicated and . . ." For metadata, the Guide details the central assistance and services to be supplied, including a free metadata creation tool (with built in validation); controlled vocabularies and code lists; technical guidance; a publisher and resource registration service; a metadata catalogue; and a catalogue subscription service. Where relevant these will all be hosted on data.gov.uk – in accordance with overall government information dissemination policy.

View Services must be standardised on OGC Web Mapping Service (WMS) and must be in a 2D latitude/longitude coordinate system – as a minimum. There will be optional provision of a 'Get Feature' operation in WMS – which provides 'pop-up' type information about a mapped feature. There are also some performance, capacity and availability service criteria, which will need to be met so that users have reasonable expectations of the services to be provided. It is not intended that View Services will be made available on data.gov.uk. Discovery of a potentially useful service/dataset on data.gov.uk will provide a link to the required publishers. Finally the guide suggests that providing feedback mechanisms (which will certainly be available through the UKLII point of access) for enabling users to provide updates or comments on information published.

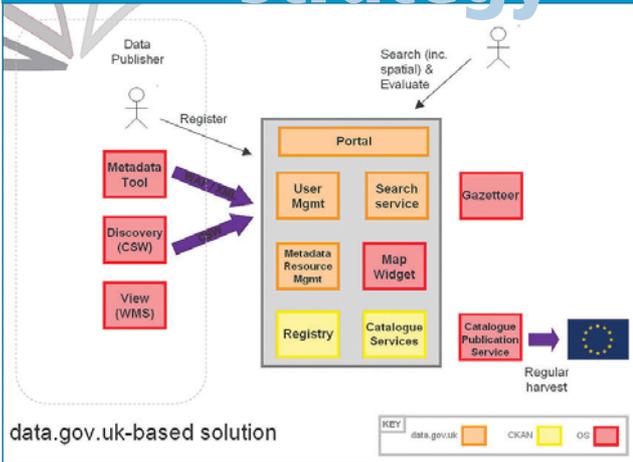
Coming soon are guides on 'The UK Implementation of INSPIRE' and 'Resources' and further down the track will be guides on data sharing, quality assurance, performance monitoring



**All milestones are tabulated in the Guide with details of when various INSPIRE performance criteria also kick in.**



# location strategy



**Figure 3: UKLII Components from data.gov.uk, CKAN and Ordnance Survey.**

anticipated that third parties will customise these components for individual data providers and/or publishers although there will be no compulsion to use these particular products. Most software suppliers are already producing their own INSPIRE compliant extensions which are likely to be the best option for many data providers with limited budgets and/or in house resources.

Note that OS will also produce the 'map viewing widget' that will reside on data.gov.uk and will also be responsible for the Gazetteer (no details) and the Catalogue Publication Service to meet INSPIRE requirements. CKAN is the Comprehensive Knowledge Archive Network which already catalogues many UK public sector datasets on data.gov.uk.

It looks as if the UK Location Programme is finally warming up and appears to be on track to deliver the central services in time for the INSPIRE deadlines. Now it's time for the data providers to get their acts together and, at least for metadata that should not be too onerous. It remains to be seen if there will be any real arguments about what's 'in' and what's 'out' and, if there are, how they will be resolved. And remember, even organisations not covered directly by the regulations can still join the club and become INSPIREd. After all – this is coalition time and we are all in the Big Society!

& reporting, enforcement and appeals in relation to public access, download services and data compliance. You ain't seen nothing yet!

There is nothing so far in these guides about the Ordnance Survey's role in producing open source software (perhaps to be branded OS2 ?!). However, at the recent UKLP/Ordnance Survey briefing to the AGI System and Service Suppliers SIG it was made clear that OS are developing an open source 'stack' of components based on GeoServer (View & Download) and GeoNetwork (Discovery & Metadata) that will be made available to anyone free of charge but with only basic support (see Fig 3). It is

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# columnist adena schutzberg



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AT THE END OF THIS WEEK in July, I'm moderating a panel with the title you see above. It's scheduled not at a GIS conference or even a tech conference, but rather at a future-focused conference, WorldFuture 2010. I'm as good (or perhaps as bad) as the next person when it comes to predicting the future. I look at the past, the present, and try to tease out emerging trends to see where they might lead.

**Addressing future issues** Luckily for me, my job at this event is mostly to ask the questions, not provide the answers. After the introductory remarks, I want to toss out some known geospatial and technical challenges to my panelists. I'll ask them to predict how or if these issues will be addressed in the next five years. Here are the questions I plan to pose:

6. How will we store data in five years? In what format? Where will it live? How will it be distributed? How will it be catalogued, to be searched and found?
7. What are the cartographic challenges we face now? Will maps "look" substantially different in five years?
8. Will we have National Spatial Data Infrastructures in five years? A Global SDI? How will we solve the people/political issues related to data sharing, which plague these efforts now?
9. How will personal locational privacy be managed in five years? Will it be a non-issue?

## The Future of GIS

We all enjoy predicting the future. But although fun, it can be difficult, especially in our business. **Adena Schutzberg** poses some interesting questions about the future of GIS and geographic data. Are there gurus out there prepared to venture some answers?

1. Geographic data is not yet accurate, up-to-date, or complete enough for some uses. Will data be "better" or at least "good enough" for most uses? How will that happen?
  2. Hardware is getting smaller, more capable and more connected. What does the smaller form factor mean for geographic applications that typically need the "context" of a larger screen?
  3. Are GIS applications going horizontal or vertical? Has cloud computing/server computing relinquished most end-users to be "just" app users? Will there continue to be "desktop" GIS?
  4. What skills do end users need? If devices "know" where users are (or users can easily indicate a location of interest) and algorithms hold all the needed models and the cloud all the required data, what is the required geospatial skillset in five years?
  5. What is the future of the user interface for geospatial software? Is it touch? Audio? Will all interaction be some version of virtual or augmented reality? What will "web maps" interfaces look like in five years?
  10. Besides higher resolution data (imagery, LiDAR, etc.) and perhaps quicker time to access collections, what is the future of remote sensing?
- A thinner line?** Perhaps as interesting as the answers to these questions are the implications of them for software providers, third-party developers, technical and casual (consumer level) end-users and their work and private lives. Stack on top of those jobs and lifestyles the health and sustainability of the planet on which we live and a good deal of change, positive or negative could come from the answers to these questions.
- The other thing these questions illustrate is the true merging of the professional and consumer use of geospatial technologies. The same data used in the field by the military is likely to show up on the evening news to highlight where the battle was fought. The soldier and newsperson and curious newswatcher may explore it using the same software. The only difference will be the nature of the questions they ask and the detail of the data available. In the future the line between the geospatial professional with a degree or certification, or even any formal training, and a citizen will be even thinner than it is today.



**The other thing these questions illustrate is the true merging of the professional and consumer use of geospatial technologies.**



# OSM: state of the map



LAST YEAR I CAME BACK from the OpenStreetMap conference in Amsterdam very impressed by the scale, quality, energy and enthusiasm of the community. I said that "OpenStreetMap is growing up fast, in my opinion it would be a mistake to ignore it ... OpenStreetMap is going to change the marketplace for

street level data. State of the Map 2010 should be very interesting." So I set off for this year's State of the Map with a lot of excitement and anticipation, apart from a few days of map geeks and sun (which always appeals) I had never visited the beautiful part mediaeval town of Girona, which proved to be a delight.

As I know too well, following successful conferences gets increasingly difficult but the organisers did a great job with a superb venue complemented by scorching weather and picnics in the

courses, the Cloudmade platform can ensure that your in-application adverts are relevant and local. Apparently these targeted adverts will command a substantial premium over untargeted placements.

Opening with another discussion about the completeness of OSM or an ad placement service was not quite the inspiring stuff I had hoped for. Then up steps **Randy Meech** from AOL to explain why they are using OSM for their hyperlocal site, Patch. AOL are trying to create the digital equivalent of local community papers with journalists on the ground plus local community contributions and they need a more detailed map than they can get from the navigation suppliers. Patch need to be able to show the paths through parks, local landmarks and local business locations. OK, a niche application that benefits from the rich content potential of OSM and one can see how it would make sense for AOL staff working on these hyperlocal properties to add the detail they need for the articles they are writing. There is a nice virtuous cycle with the local experts

## OSM – this could get serious!

After a slow start, this year's OpenStreetMap conference in Spain turned out to be full of startling surprises, some of which could prove discomfoting, as **Steven Feldman** discovered.

park for lunch and drinks. Attendance felt to be lower than last year although travel to Spain was probably a factor for some compared with Amsterdam.

Friday's "OSM: We're in Business" focused on uses and applications. Unlike last year there was no big opening keynote with razzamatazz. **Roger Muller** of Logiball opened with a discussion about using OSM in potential advanced navigation applications. He concluded that OSM only met 10-15% of the needs of these ultra precise applications but then pointed out that commercial products were just as lacking. He presented some maps illustrating the comparisons of coverage and detail in Germany between OSM and the commercial providers. Conclusion? In some places OSM is richer but in others its coverage is thinner. The question I asked myself was, under what circumstances would this variation be a barrier to use and would it ever be an advantage? **Muki Haklay** has undertaken some similar comparisons with Ordnance Survey data in the UK and comes up with the conclusion that for many applications OSM is "good enough".

**Christian Petersen** of Cloudmade talked about OSM "monetisation" (that's making money out of OSM for those who struggle with newly contrived words). Cloudmade is a business started by **Steve Coast**, the founder of OSM and **Nick Black**; they have built a platform for web and mobile application developers that delivers a host of features and capabilities on top of OSM. Their business model is to help developers make money from their apps by providing an advertising platform that can be tuned to be vertically specific and location enabled. If you have built an application that shows ski trails or golf

adding content to the map that the whole OSM community can benefit from and vice versa.

Then Surprise No. 1! "Have a look guys, we thought we would try using OSM in a beta version of our site for the UK, Germany will follow soon." AOL chose UK and Germany because they considered the quality of the data to be good enough to use in their routing, which is pretty significant as they consider routing to be one of the flagship features of Mapquest.

Surprise No.2: AOL announced that they would be donating \$1m of resources (not cash please note) towards improving the quality and coverage of OSM in the US. Trigger the applause in the room but (and maybe this was just my perception) it didn't appear that the OSMers were deliriously happy about this mainstream investment in the project.

**Katleen Janssen** from Leuven University gave a very clear presentation on "OSM and the Law", focusing on IPR, Privacy, Re-use of PSI and Liability. It says a lot about the development of OSM that there was space in the programme for an academic lawyer to consider these topics.

**Putting Nairobi's slums on the map** Two presentations demonstrated the power of OSM to make a difference to peoples' lives in the poorest parts of the world. **Phillippe Rieffel** talked about using OSM in a minimal GIS for primary school kids on the One Laptop Per Child ([www.laptop.org/en](http://www.laptop.org/en)) devices. The case study comparing kids in Germany and Rwanda was inspiring and illustrated how important open source and open data were to



**Have a look guys, we thought we would try using OSM in a beta version of our site for the UK, Germany will follow soon.**



educational projects in the third world.

**Mikel Maron** talked about mapping Kibera, Nairobi, Africa's largest slum covering 2.5km<sup>2</sup> and home to 1m people. In October 2009 Kibera was a blank on the map while the rest of Nairobi was quite thoroughly mapped; today through community activism, lead and stimulated by Mikel and other volunteers, Kibera is mapped at a basic level with schools, churches and water points all detailed ([www.mapkibera.org](http://www.mapkibera.org)). Not only does the map provide a better knowledge of Kibera for the local population and NGO's but the process of creating it has built computing and social skills and engendered a sense of cohesion and identity amongst the 13 participants from each village within Kibera.

An important observation was that volunteering does not exist in very poor countries where most people are struggling to feed and house their families, so OSM may also be a route to paid employment for the participants. The next phase is to capture more thematic content around, health, education, water, sanitisation and safety.

Day 1 finished with me chairing a panel discussion on business models and some elevator pitches from startups using OSM. The panel's conclusion seemed to be that it was increasingly difficult to get people to pay for anything geo in the consumer space except through the medium of advertising; and well targeted geo-adverts can attract a substantially higher rate per view/click. In the B2B space, service, quality and identifying niches were the panel's suggestions to the startups. Perhaps a little surprisingly the community vote for the best elevator pitch went to a small consultancy focused on helping clients to use OSM. They acknowledged that their business was not very exciting, but everyone understood what they were offering and why clients would pay for their services.

Day 2 opened with OSM founder **Steve Coast's** keynote. Quite downbeat compared to the previous year – gone were the predictions of 1m users with the focus switching to the tiny proportion of people who sign up and actually contribute to OSM, which Steve describes as the challenge of "engaging the long tail". This was a theme of **Nick Black's** keynote too, entitled "From the outside looking in". He called on the community to be more welcoming and inclusive, more accessible and welcoming to people of a less technical bent.

**Muki Haklay** gave a fascinating presentation on "The Tyranny of Place" which suggested that people map initially in their local area and that the demographics of completion mean that OSM is most complete in high population areas and that there is an inverse correlation between completion and deprivation.

**Matthew Quinlan** (Bing Maps) talked about search and how much of it has a local context. Fairly regular stuff that had me wondering about the relevance for this audience. Then without any build-up, almost as an afterthought, Surprise No. 3. In the next couple of

weeks Bing will offer an option to switch to OpenStreetMap as the base map. It wasn't clear if that is for the whole world but it sounded like it was. The response from the audience was very muted but I will put that down to a "err. . . did I hear that right?" moment. Surprise No. 4 came in response to a question from the audience as to whether Microsoft will make their aerial imagery available to the OSM community in the same way that Yahoo did some years back. Matt replied that they are looking into it; there may be some license issues so this is not a clear yes but clearly this is under consideration.

Two excellent presentations on mapping accessibility for the mobility restricted (from wheelchair users to mothers with push chairs) and creating maps for the blind (embossed Braille type cartography and talking maps), which prompted me to think about the very different map needs of the disabled. Maybe I am unfair but I somehow don't imagine the navigation map suppliers would see a big imperative to address these challenges.

**Producers in a "do-ocracy"** The final session of the day was a panel entitled "What is wrong with OSM?" chaired by **Christopher Osborne** of ITO World on which I was a participant. It prompted a quite polarised discussion between some of the participants and the wider audience about the purpose, direction and organisational structure of OSM. It was clear that some of the early contributors, who are the mainstay of OSM, are understandably reluctant to consider changes that do not match their personal vision and objectives.

My thought after this discussion was that OSM is currently a community of producers (or as one of the other panellists described it a do-ocracy). As the usage and application of OSM extends from those who map because they can and because it is fun, to those who need the maps as support for an aid operation in Haiti, to empower the poorest in Kibera, to create accessibility maps for the disabled or to potentially replace commercial providers on Bing and MapQuest, the organisation will have to become more responsive to its users.

So in one weekend two very large players announce that they will start to use OSM and support the project in tangible ways. This is surely a sign that OSM is moving out of the geeky niche phase and getting serious. However, as the big guys get involved expectations and the need to respond to users' requirements will have to drive change. I just got the feeling that some of the long-term volunteers weren't completely comfortable with that. It's going to be another interesting year ahead for OSM but I am sure that the State of the Map in 2011 will be even more vigorous and healthy.

• For more about the State of the Map, go to: [http://wiki.openstreetmap.org/wiki/State\\_Of\\_The\\_Map\\_2010](http://wiki.openstreetmap.org/wiki/State_Of_The_Map_2010)



*... mapping Africa's largest slum. . . the process of creating it has built computing and social skills and engendered a sense of cohesion and identity*



#### About the author



*Steven Feldman is an independent geo-strategy consultant. You can follow his regular comments on the GI industry at [www.knowwhereconsulting.co.uk](http://www.knowwhereconsulting.co.uk)*

# advancing data capture



*Left: Customised software exactly replicated the National Grid's existing workflows and (above) low cost multi-function devices are perfect for equipping a whole mobile workforce.*

**Who Dares, Wins** KOREC's Director of Sales, **Andrew Beckerson**, examines the recent advances in field data capture and argues that our current economic climate makes this technology ripe for the picking.

THE PRESSURE IS ON. In 2009, our industry experienced the harshest trading conditions for a decade and with new government spending cuts kicking in, we can expect more of the same. There will be no room for complacency – councils and contractors alike will be looking to minimise their operating expenses and maximise their efficient use of resources.

Ten years ago, there was an obvious solution. Improving efficiency meant simply switching from pen and paper to digital methods. The reward was an increase in field and office productivity of up to 50%. Now there is even more excitement! From a technology point of view, we've come a long way in the last decade and the market place is full of new tools for any number of data-capture applications. But customers don't just want tools, they want solutions to the challenges of working within tight budgets, with a limited workforce, and with increased workloads. So what are the options?

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**But customers don't just want tools, they want solutions. . .**

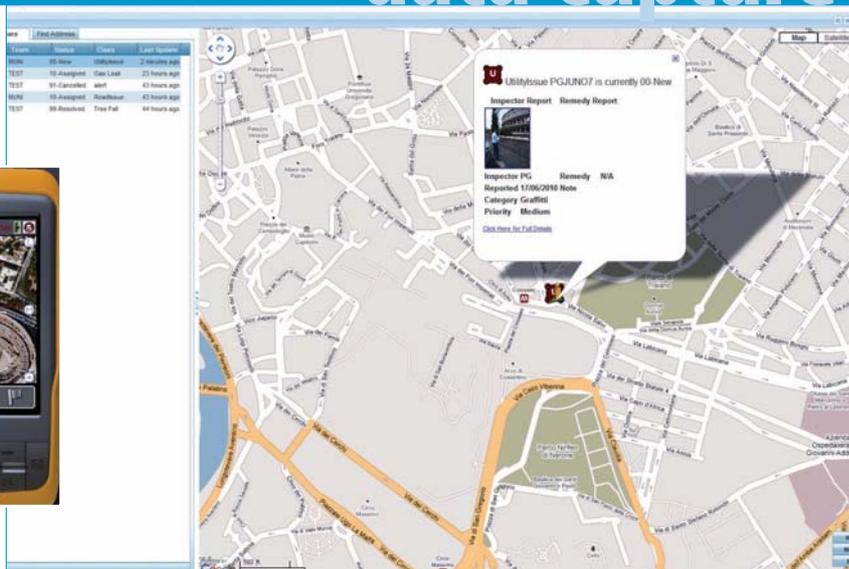
”

**Work wirelessly** The arrival of 3G and 3.5G mobile communications has significantly improved wireless internet speed whilst the cost of sending data has dropped. This has created the perfect conditions for wireless working. Imagine a complete two-way data flow of work instructions, mapping, GIS data, photos, tasks. What could this mean for your fuel

consumption, your efficiency, your costs and even the safety of your team? Return trips to the office for missing data need never happen again. Software updates for field worker's devices can be downloaded on-line. When a job is finished, data forms, notes or photos verifying completed work can be wirelessly transferred to the office.

Korec recently sold a government agency nearly 200 Trimble Juno SC handhelds with integrated 3.5G HSDPA cellular modems. Each unit was equipped with Trimble iCapture software, a custom solution from Trimble Professional Services (TPS)\*. The agency now has the means to synchronise data capture forms remotely and issue software updates wirelessly. This feature alone could be vital when choosing a system because the cost savings can be huge and, most importantly, your mobile work force stays in the field and remains productive.

**Peter Lloyd**, part of the TPS development team, believes very strongly that wireless management of remote field workers and asset data is the key to maximising a worker's time on site and managing a mobile workforce effectively. 'We took a long hard look at how to increase productivity and efficiency in the field and how to really exploit the new technology that's made wireless working viable. The end result is a customisable solution that delivers on many levels. If



*Above: Keeping the City of Rome safe and clean by using wireless working. A combination of customised Trimble iCapture software and Juno SC handhelds means that lone workers can be safely tracked back at the office as they wirelessly capture data on incidents such as the location of graffiti, illegal dumping and vagrants. This customised solution was developed for the City of Rome to include a "panic button" that can be used to alert the office and mobile staff if assistance is required immediately.*

the iCapture software is used in conjunction with a GPS and wireless enabled field computer, the mobile worker can carry out all the usual data capture tasks, but with an added bonus. Data is automatically transferred, displayed and shared on a custom web mapping service back in the office. Integrated data and map displays can be viewed showing last known times and positions for all field workers and all recorded incidents including location, attributes, photographs and sketches. This information can then be used to assign a task to the most suitable remote field worker and a package of information relating to the new job sent wirelessly. If there is a problem, technical support can be offered remotely. Most importantly, lone workers can be tracked. Further productivity may be realised by analysing recorded information. Tracks of individual workers can be combined with time worked and incidents recorded to measure and compare productivity and output.'

Technology in the office has also been greatly simplified and running these processes is a straightforward operation. For example, previously wireless working was thwarted by the need to gain access through a company firewall. The Internet can now be used to manage the data in a "cloud" on the web, without compromising the security of a corporate system.

**Switch to multi-function data loggers** If you've got the latest generation of mobile phone, you'll know how multi-function devices are now commonplace. Handhelds available for data collection are similarly packed with features but with higher accuracy and levels of ruggedness. Trimble's Juno SC handheld is a typical example. Designed and

priced for equipping whole workforces, it offers 2 to 5 metre GPS positioning accuracy in real time or 1 to 3 metre if post-processed, a 3 megapixel camera, Internet access, a 3.5G cellular modem for data transfer and is fully compatible with a wide range of data capture and asset management software.

The perfect tool for wireless working, this type of multi-function field computer is incredibly easy to use. Those collecting data no longer need to be surveyors or GIS experts; important attribute and positional information can be collected and automatically sent back to the office without

## Industry opinion: what does the future hold?

**PETE WILKINSON, HEAD OF TECHNICAL SOLUTIONS GROUP, ESRI (UK)**

A growing number of organisations incorporate wireless mobile working into their core business processes. Investment is justified for data capture, job management and lone worker protection. This trend will continue as more and more mobile devices become location-aware and will lead to new and innovative types of mobile application.

In many cases organisations are capturing spatial information in real time and utilising improvements in telecommunications technology to synchronise with the back-office systems. This ensures both field workers and office staff have the most up-to-date view of the data. In a number of situations, for example when dealing with utility outages, this can be critical. It also enables information captured in the field to be shared with the rest of the organisation through integration with back-office systems such as CRM or ERP.

The growing capability of mobile technology and software, the falling cost of devices and the increasing availability and accuracy of location information, indicate that the current trends will continue. Given that mobile working often yields a demonstrable return on investment, we expect the number and range of mobile working scenarios to grow significantly in the coming months and years."

impacting on the job that needs to be carried out. In Ireland, forestry rangers are collecting GPS data as well as doing their normal day-to-day tasks with virtually no interruption to their daily work.

In the UK we have seen commercial companies equipping their teams with this type of device to add value to their day-to-day work. For example, a gully cleaning company is now proactively managing its gullies through the accurate plotting of their location and by photographing and recording specific attribute information. Each asset now has an accurate history enabling them to prioritise work to increase drainage capacity. At the same time they reduce unnecessary cleaning in other areas and consequently, unnecessary costs. Although none of the operators had used a system like this previously, the training required was minimal. Again, there is virtually no interruption to their main business of cleaning gullies.

**Customise your system** There has recently been a rise in the number of requests for specialist solutions where the cost of customising a system is clearly offset by the benefits it will bring. A typical example of this is the tweaking of existing data-capture software to replicate existing workflows and therefore ease the way for new digital working practices, all with minimal disruption. National Grid chose customised software when equipping its teams with a digital solution for a gas mains replacement programme. They required a fast, accurate and easy-to-use method of surveying as-laid and abandoned gas pipelines to reduce process cycle times while still exactly replicating their existing procedures. This was achieved with a customised version of Trimble FastMap including an extensive feature code library that mimicked their existing symbology and workflows.

Sometimes the driver for a specialist application can be a change in the law. There is an immediate requirement in the UK to survey the manhole and sewer network to conform with STC25 data structures. Newer legislation, expected later this year, will require wastewater utility companies to oversee all previously un-adopted sewers such as those on private property. In response to these changes, TPS, in collaboration with KOREC, has developed a custom

solution for the UK called Trimble FastMap Mobile Drainage Surveyor software.

This software has been developed to deliver specific industry functionality such as centimetric vertical height accuracy for manhole covers and invert levels. It works in conjunction with Trimble R8 or R4 GNSS receivers, which are capable of offering the required vertical accuracy. For end users, the price of this customised system can be justified when compared to the advantages it will bring – a survey process capable of working many times faster than traditional methods.

What factors can we expect to shape the future in field data technology? Arguably the same factors that have shaped the developments above: the need to increase productivity and efficiency whilst reducing costs. Solution providers must continue to focus on these goals and continue to ask the question, “. . . if the switch from pen and paper based methods to digital can increase productivity by up to 50%, how can we improve on this?” Then they will be perfectly placed to deliver systems that really address the needs of the market place.

\* *The Trimble Professional Services group offers software development, back office GIS integration, and software implementation for custom field data capture solutions in Europe, the Middle East, and Africa.*



#### About the author

Andrew Beckerson, KOREC's Director of Sales, has been with the company since its inception in 2005. He has 30 years experience in the survey, construction and mapping industry and over 20 years of working with Trimble GPS.

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**. . . a survey process capable of working many times faster than traditional methods.**

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# Data as a service a new era dawns



**James Cutler, CEO of emapsite, "What users want is cost-effective, single source, on-demand up-to-date data of their choosing – licensed appropriately."**

THE AMERICAN WRITER and critical thinker **Stewart Brand** famously said that "information wants to be free". Even then (1984) he recognised the rapidly falling marginal cost of distribution that digital distribution affords. People often forget that he prefaced this with "information wants to be expensive, because it's so valuable".

Of course, ultimately nothing is truly free and we all, in some way, however indirectly and ignorantly, pay for 'free', even if it's spam. It just doesn't seem that we do.

Similarly with geographic data. First the platforms such as Google and Bing, then the data suppliers such as NASA and Ordnance Survey, now the vendors,

notably PBBI and ESRI. For rather different reasons the casual internet user is now exposed to a wealth of often remarkably detailed location specific mapping and imagery for just about any location on the planet. Apparently for free.

**Our data** In a parallel development, evidenced by the data found on data.gov in the US and data.gov.uk here, the pressure for the release of "our" data – that is data collected by the public sector in the delivering

which will make the data accessible. You need to be able to meet any demand for data from the moment you capture it in the front line, through your back-end processing and on to publication – and that includes providing adequate metadata. The latter allows the data to be discovered and an assessment to be made of how useful it might be prior to embarking on the authorisation and access processes to actually obtain the data. Admittedly it can be easier to publish and be damned – or instantly commended. By one recent estimate<sup>1</sup> over 80% of data currently on data.gov.uk contains no currency metadata but is 'available' for use by the 'public for transparency'<sup>2</sup>.

The OpenlyLocal<sup>3</sup> website is making a fantastic effort to stimulate thinking in this arena, on all manner of aspects from 'failing forward' to standards, to true linking of data across different agencies of government. If it's granularity you want then, at all expenditure over £500 significant granularity (of a kind) is what you will get. And with 'geo' you can even visualise transparency, spending and other elements of our bureaucracy. **Sir Tim Berners-Lee** says "put the data up as it is; join it together later", the inference being that much can be learnt from the data and from the process of publishing it that can be applied to improving both – until end-to-end collection to dissemination nirvana is achieved.

## Data abundance – dawn of a new era? James Cutler, CEO at emapsite, analyses the winds of change blowing through GI and, whether we like it or not, how they might impact our domain and the way it will be figured in the wider world.

and monitoring of public services – has found location to be the binding element. This is something GI practitioners have long known but poorly communicated. In the blink of an eye all manner of government-collected data is geographic information because it has a postcode or an address. Everything does happen somewhere; and spatial is only special in that it is rather useful all of a sudden.

Such data is no more geographic information in the 'conventional' sense than 3D building models or transport network schematics. And therein lies the rub, not to say the opportunity. There is gold in 'that there' public data hill of bits and bytes (pity it's mostly un-tagged, non-structured, hard to get at PDFs and CSVs but it's a start). There is an accelerating private (and public) sector interest in, and demand for, the 3D models and transport networks which have provided the basis for some of the most tangible bottom line benefits to local authorities. This in essence is the value conundrum.

In a perfect scenario the marginal cost of distribution can be as close to zero as makes no odds. To achieve this as a data supplier you have to put in place the processes, approaches and infrastructure that automate, or at the very least oil, the mechanism

**What users want** It is still early days in the creation of value from the release of data, with or without location attribution. However, the frenzy around the importance of doing so and the value that would be unleashed is far from being realised. Some might say that only a 'political' objective has been achieved, the costs and benefits gainsaid for the achievement itself. What users want is cost-effective, single source, on-demand up-to-date data of their choosing – licensed<sup>4</sup> appropriately.

Linked data, RDF, ontologies, OWL (Web Ontology Language) and the array of semantic web tools and technologies remain arcane; perhaps rightly so as they become embedded in the infrastructure of the information economy. They will instead come to enable and underpin third sector and commercial enterprise agenda-focused implementations, such as the recently maligned<sup>5</sup> spotlight spending<sup>6</sup>. The spend management consultancy **Spikes Cavell** have leveraged their knowledge of the public sector data environment to be amongst the first to offer tools to drill down into local authority spending. Are local authorities content to use this route (expedient, free) to satisfy demands for accessible public sector data rather than

“

**There is gold in 'that there' public data hill of bits and bytes. . .**

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# Data as a service a new era dawns



**For serious users it is critical the 'service wrapper' exceeds their expectations.** © Crown Copyright.

doing it themselves? Some of them must be. Does the casual observer, citizen, business or other interested party benefit? Of course. Is it 'right' that private enterprise benefits from so doing? Of course – it is enshrined in the Public Sector Transparency Board's principles<sup>7</sup>. Did they make a tactical error with the licensing and the failure to offer the raw data as well? Absolutely.

Which leads us to a related question. Does the release of data whether in aggregated form, or even in raw form, actually offer easy comparative analysis or suitable data for investigative journalism or granularity to hold such authorities to account? Probably not. Is that a 'bad' thing? Perhaps, until that is, you look at the data itself and what is being released. It no more offers the ability to assess corruption or value for money than fly to the moon. Add to this the fact that any data collected by the private sector in the course of delivering services to the public sector is not covered by PSI regulations and you may well be cynical.

**Packaging data and services** However, the flurry of interest in Spikes Cavell and OpenlyLocal does demonstrate that there is value to be had from providing cleaned data in accessible form to users. This precisely mirrors both the general ad-fuelled Google model and the rise to prominence of the 'aaS' (...as a Service) appellation. Some will always be able and willing to go to the source, to seek out the discoverable data or services, and build their own propositions from the raw materials. Others will offer enabling tools to help end users follow a similar path. Still others – perhaps most others – will seek out those who can package up the data with services, support, consultancy, a service level agreement, data cleansing and so on. The classic 'freemium' value chain.

The 'success' of ASBORometer<sup>8</sup> represents both sides of this equation (a free iPhone app to tell you about ASBO numbers in your current or intended location). It demonstrates what is possible with free data using open source tools<sup>9</sup> and how national newspaper attention can win you lots of downloads. This tends to obscure the rather wretched utility of the data itself. The app may be extended with OS OpenData in the near future.

As the absence of innovative apps based on OS OpenData perhaps indicates, defining the form in which to release data to best meet the needs of the majority of 'users' can be tricky. Techies and enthusiasts may want to 'use' it while the average citizen merely wants to 'see' it. It may be an altogether different prospect for commercial, third sector or public sector users, though that seems unlikely in the current economic climate. To misquote Eric Pickles<sup>10</sup>, "does a

local authority really need a semantic web specialist".

Data is correctly seen as an increasingly commoditised building block from which information, knowledge and wisdom, each of increasing value to the beholder, can be derived. Everyone in the value chain – bedroom coders, open source developers, market entrepreneurs and others – will bring their own prejudices, agendas and priorities. To pretend otherwise is naïve. The further up the chain you go the more acute this becomes.

**How to pull it off** The trick that intermediaries, such as the PBBi Data Market initiative, must pull off is to add value to the building blocks up to a point at which their market place wishes to take over and add its own value. There are those in these markets who will revert to the data producer but for many the focus on core expertise means that it is cost-effective and expedient to seek out others for whom geospatial data provisioning is their core focus.

Data provisioning is far more about all elements of the service than it is about the data itself. The service involves processing, updating, replicating, tracking, reporting and so on while the user gets on with their own application. On the whole, most serious users are familiar with the type and availability of data that they need. It is critical for their satisfaction that the 'service wrapper' for that data meets and exceeds their expectations in terms of the way it is processed for them – clean, error free, up to date – and exposed to them using standards, best practice and web services.

There will always be users who don't need support and 'can do it all themselves' but with location an ever more critical part of business decision making the challenges associated with the geographic data supply chain militate very much in favour of trusting it to proven providers and their platforms. Ultimately, people buy people and trust. As the raw data playing field gets ever richer and more level, buyers will care more than ever about the service and, for users and suppliers alike, the terms that underpin it.

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**Data provisioning is far more about all elements of the service than it is about the data itself.**

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Simon Doyle: 'being passionate about data'.

#### How will GeoCommunity'10 differ from last year?

We have really focused on the wider issues which face us all, such as the economy, the impact of a change in government and also the opening up of publicly held data. I think that attendees will see and hear some really strong messages about the use of data and how data usage actually provides real benefits to the general public.

#### There are fewer papers and less streams this year. Is this a reflection of tough times or a fine focusing of the agenda?

Nothing stands still and for the past three years we have varied the number of streams. This year there is actually only one fewer stream than in 2009. We received a considerable number of papers submitted this year for consideration - a real testament to how the event is recognised. We always have to strike a balance between keeping a focus on the main issues and also giving people the chance to network with one another. There are a range of great papers which illustrate the delivery of efficiency savings, demonstrate innovation, discuss public policy, good governance and risk management.

topic that is really outside of your comfort zone or usual area of expertise. Take the chance to listen to something new, different or a bit left-field. This is an event that is all about sharing ideas and building on best practice. The programme is so strong that the challenge will be in planning to take an hour or two out to soak in the debate and also meet new contacts and chat over a coffee.

#### Since the last GeoCommunity we've seen the free data initiative, the UK Location Council's first meetings and publications, and big companies moving ahead into software, data or infrastructure as a service. Where does AGI see the prospects for GI in the medium term? Are we winning the location argument?

I am really pleased to see the AGI leading the debate within the Defra led UK Location Council and also within the standards world on Inspire. So at a policy level, geography is being taken more and more seriously. Initiatives like Total Place/Localism are good examples of the importance of location. The opening up of a range of data on the data.gov.uk portal is very interesting; there are now many commercial and not-for-profit ventures capitalising on this.

**GeoCommunity'10: why you must attend** With budgets at maximum stress it can be hard making the case to attend a conference, even if it is the number one event in your field. *GISPro* talked to the man behind this year's GeoCommunity Conference **Simon Doyle** to find out just why it really is a 'must attend'.

#### Your two keynote speakers come from beyond GI. What were your criteria in choosing them?

Our industry can sometimes be accused of being a bit too insular. This is a time when, as geographers and data professionals, we need to embrace the language of our consumers and that of industry. Having speakers from areas beyond our usual sphere of interest is always a good way of sharpening the way we go about selling the benefits of geography and place.

The next 12 months will be quite challenging for many people, not just "geo" people. I feel we have a good opportunity to be catalysts for change. Learning from others is important, as is making sure we don't just reflect inwardly. The issues we all face are much wider than just geographic ones, we need to really apply our knowledge, skills and tools in context. The AGI's mission is all about outreach and delivering benefit; this is a great way of servicing that mission.

#### Can you give some advice to a GI neophyte as to how to plan their time when there's such a choice?

Firstly I would suggest picking one or two papers that are of direct relevance to your day job. It is important to listen to people who are in a similar position to yourself. I encourage people to contribute to the discussion during and after the sessions. As a delegate you will have a lot to offer to the presenter. Secondly, pick a

We have been lucky to secure Professor Nigel Shadbolt as a keynote speaker this year; he was an architect of this new approach. The emergence of Twitter and other social networking capabilities and advances in things like augmented reality can also lead to a greater amount of location specific data being created. Dr Andy Hudson-Smith will be providing a primer in these areas.

I think the importance of place is being increasingly recognised. The new prime minister has recently launched initiatives such as "your square-mile", which have place and locality as a central tenet. As data experts and practitioners we still have some work to do in better framing our language and messaging so that the benefits of our skills and expertise are fully appreciated.

#### If you could do one thing this year to benefit the GI community, what would it be?

For me, it's being passionate about data and keeping the language and message simple. Data fuels decisions - embrace it as an asset.

• *Simon Doyle is a lead practitioner in PricewaterhouseCoopers LLP (PwC) Risk Assurance Services, Data Practice. He is Conference Chair of AGI GeoCommunity'10 and was AGI Chair in 2006.*



**The programme is so strong that the challenge will be in planning to take an hour or two out to soak in the debate...**



# AGI GeoCommunity sponsors

**IT IS BARELY nine months since the AGI's last annual conference. GeoCommunity'09 at Stratford-upon-Avon was a sell-out that attracted over 600 with jam-packed plenaries and a choice of 70 sessions spread over six themed streams. Can AGI repeat it for 2010? I think they're going to have a damn good go, says *GISPro* editor Stephen Booth.**

This year's plenary speakers look interesting and several come from beyond GI. **Robert MacFarlane** works in the Cabinet Office's Civil Contingencies Secretariat and **Lai Wah Co** heads up the CBI's Economic Analysis Group. The list also includes **Andrew Hudson-Smith** of CASA (Centre for Advanced Spatial Analysis) and speakers from the GI supplier side like **Richard Waite** of ESRI and **Vanessa Lawrence** of Ordnance Survey.

But perhaps the interesting catch is Professor **Nigel Shadbolt** for the final plenary. Shadbolt was one of the three gurus advising Gordon Brown on what to do next about the Internet last year, along with Sir **Tim Berners-Lee** and **Martha Lane Fox**. He is slated, along with Berners-Lee, to head up a new £30m Institute of Web Science. Will it survive the Coalition's swinging cuts?

Turning to the individual sessions, although trimmed by ten and reduced by one stream from last year, most delegates will still have to make hard choices on whether they follow just one stream or jump around. With teasing titles like "Cocktails on the Titanic" or... "Oi! Sir Tim: hands off my spreadsheet!" plus "Solving Geobabel without tears" and the positively optimistic "It's all one big opportunity", there is a diverse and tempting menu from which anyone involved in GI, whether at the heart or the fringes, can get a square meal.

The event is of course sponsored by some of the industry's leading players and those who are willing to talk to us about marketing opportunities in *GIS Professional* (as opposed to just bombarding us with press releases) are listed below along with the "me too's".

Like all really good conferences, GeoCommunity would not be complete without a little fun and a party; the AGI's has been famously good over the years. The pre-conference icebreaker will feature the jazz guitarist **John Brunton** ahead of "Alan's Annual Quiz" when AGI's chief operating officer **Alan Wilks** gets his chance to wrack (or wreck?) our brains. The big night is the AGI Party at the end of Day One and this year's theme is Hats, which gives lots of scope for the inventive and few excuses for not wearing something even for the follicle challenged. And then there's the Soapbox, launched last year and to be repeated again in 2010. This is an opportunity for the geo-ranters and it's in the bar so it's very sociable too. A great way to spend two-and-bit days. Don't miss it.

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### Also sponsoring AGI GeoCommunity'10 are:

Autodesk, Infoterra, Innogistic, Microsoft - Bing Maps, Navteq, Ordnance Survey, Pitney Bowes Business Insight and Sigma Seven.

• **To book your place at GeoCommunity'10, go to:**  
[www.agi.org.uk/agi-geocommunity/](http://www.agi.org.uk/agi-geocommunity/)

# conference report



**Tim O'Reilly and Michael Arrington: dissecting the future for Google, Facebook and Microsoft.**

Photo courtesy of James Duncan Davidson and O'Reilly Media.

REGULAR READERS MAY REALISE this is my third report on this annual event held in California's Silicon Valley to showcase the latest and greatest in web 2.0 technology, the so called "geoweb". It also includes concepts applied to location.

First impressions are important. This year the thing that struck me was that the number of "grey beards" (senior execs over the age of 40) had grown significantly. Perhaps messages from their staff, that this stuff is important, have been heeded. It is also significant that at a time of deep recession, the conference was sold out, with circa 900 delegates. Perhaps, to paraphrase **Hilary Clinton**, delegates attended to – "never waste a good crisis as a catalyst to achieve significant change." A disappointment was that there were only 15 delegates from the UK, although this did include some heavy hitters including **Ed Parsons** (Google), Professor **Jonathan Raper** (City University) and **Peter ter Haar** (Ordnance Survey).

direction of Google, Facebook and Microsoft, O'Reilly suggesting that "head on" competition to Google in the search engine market was fruitless, but identifying areas where they were weak was a better strategy. Arrington expressed concern with what Facebook is doing – selling identity information to third parties and saw an inherent conflict between privacy and profit.

The interview with Chris Vein covered the release by the City of San Francisco of a wide range of largely geospatial datasets and a developer's API, under an initiative called Open 311 (<http://open311.org>). They see Open 311 as an international effort to build open interoperable systems that allow citizens to interact more directly with their cities. I should explain that "3-1-1" is the telephone number of a local information service operated by many local governments in the US and Canada. Open 311 is big news in the US and of course has strong parallels with making public data public and [data.gov.uk](http://data.gov.uk) back here. Whilst praising the initiative, O'Reilly made the telling point that Apple wouldn't launch a new API without a huge marketing and sales effort but that government didn't have the resource to do that. So, why should commercial organisations be interested? He answered his own question by suggesting

## Where 2.0: Web 2.0 meets location

Less off the wall and some good new acts was how **Andy Coote** found this year's Where 2.0 event. But amidst a tiny helicopter, mash ins, mash ups and freemiums, there are still those who need to get a life.

**IGNITE**, the traditional curtain-raiser on the evening before the conference, is a series of 15 five-minute slide presentations on "my stunning new idea". The slides roll as presenters reach the stage and they are "hooked off" immediately their time runs out. It had less "off the wall" presentations than previous years, a few rants but some good "new acts" who can be expected to headline next year. It was spoilt to my mind by splitting the two presentation sessions with Navteq's North American LBS challenge, in which huge amounts of money (\$750,000 top prize) were awarded to some frankly underwhelming applications. It only became clear later that these amounts were mostly in the form of data and licences rather than the hard cash these start-ups probably needed.

**Chat Show** **Tim O'Reilly**, the conference founder and head of the eponymous publishing house famous for the "in a Nutshell" series of readable computing texts, personally took a more active role this year. He did a series of one-to-one interviews with key figures, including the web industry pundit. **Michael Arrington** of TechCrunch and the chief information officer of San Francisco City, **Chris Vein**. Videos of most of the presentations mentioned in this article can be accessed at <http://en.oreilly.com/where2010>

Arrington and O'Reilly dissected the future

that whilst apps developed under this initiative would be free to the public, they could be sold as add-on services back to the city – nice idea!

**Philosophy and sales pitches** The sponsors each had slots to present their products and notably fielded their top people. **Michael Jones** from Google, presented a philosophical treatise on "the new meaning of mapping" discussing the difference between what something says and what it means using the Rosetta Stone as an example – explaining that Ptolemy the Great, used the stone to announce reduction of taxes and creation of a stimulus package.

The overall sales message however was that there are 25 million firms with less than 500 employees and these small firms need location-based advertising to reach their markets. In contrast, Nokia's **Michael Halhberr** gave a straight sales pitch on why the bundled location apps (Ovi maps) with their smartphones and **Dave Fetterman** from Facebook, seemed to have missed the point of the conference (location) completely by focusing on how many users they have. However, **Jack Dangermond** (ESRI) did manage to mix the societal benefits of GIS with describing ArcGIS 10, their SaaS-ready offering due for release later this year.

**Integrated 3D imagery impresses** **Blaise Aguar** and **Arcas** from Bing (formerly Virtual Earth) described

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... "head on" competition to Google in the search engine market was fruitless, but identifying areas where they were weak was a better strategy.

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their work combining street level capture of urban areas with oblique and vertical areal imagery to provide large scale photo-realistic 3D “platform” technology. Microsoft prefers to use the term platform rather than application to describe Bing maps, seeing it as a way to “bind services together”. They also say “mash-in” to distinguish what can be done by adding content and applications to their platform, from having to integrate data in mash-ups using the developer’s own infrastructure. Blaise demonstrated some truly impressive visualisations and spoke about how they are expanding their capture programme using not only camera equipped cars but also “human-mountable rigs” to enable coverage to be extended inside buildings. The video of his talk is well worth watching on UTube <http://www.youtube.com/watch?v=gjOa6i9cXFI&feature=related>

**Mobile Social 2.0** Dennis Crowley, CEO of Foursquare, gave a perplexing account of the phenomenal growth of their company from launch in March 2009 to 750,000 active users a mere 12 months later. It was perplexing because it left me thinking that most of their users needed to get a life. However, Foursquare (and competitors such as Gowalla) do seem to be a catalyst for “positive behavioural change” in their users, getting them out of their homes and into the real world.

Originally the concept was that you checked-in to see where your friends are, useful but limited – a kind of twitter with location. They then started building in “game mechanics”, adding rewards for certain actions and achievements. For instance, people arrange parties for Foursquare users where you get a “digital badge” if more than 100 Foursquare users attend. Is it me, or does the badge concept sound like going back to the cubs or brownies? However, there is a local advertising angle to this – become the most frequent visitor, described as the “Mayor”, at the local coffee house and the trader gives you a free latte; or pick up a cash-back voucher for introducing three friends to your favourite pizza restaurant. Won’t work here? Don’t be so sure – in cash-strapped times, small businesses are looking very hard for innovative ways to bring in new customers. Crowley is admirable for not taking himself too seriously, exposing some of the more bizarre entries in Foursquare such as the offer of a 15% discount on medical marijuana in Beverly Hills for the mayor of the store. However, with Tim O’Reilly as an investor and a rumoured \$80m stock market valuation this is no joke.

**Disaster support** Several presentations addressed the successful use of geoweb technology to help the Haitian earthquake response. The deployment and enhancement of the Ushahidi open source software product (see <http://haiti.ushahidi.com/> for more details), created originally in Kenya to track the troubles around the time of the disputed election, was impressive. As was the coordination of 1000 volunteers enhancing

OpenStreetMap around Port au Prince interpreting and geotagging twitter feeds of information about people trapped under the rubble in the days immediately following the quake.

**Technology snippets** The security software specialists, Quova, were exhibiting for the first time. Their stock in trade is fraud prevention using a database of the geographical locations of IP addresses to help identify suspect transactions. It is their software that stops you using the BBC iPlayer to download programmes when you are abroad before they have been screened there! Quova can see opportunities for using their services in hyperlocal geo-targeted marketing and decreasing transaction abandonment on the web by recognising the users location and automatically presenting information in the correct language/currency.

My favourite piece of new technology was the AR Drone from hands-free wireless car kit designer, Parrot technology, based in Paris. This is an autonomous lightweight “helicopter” less than one metre square, powered by four small but powerful rotors and with video cameras for forward and downward vision. The drone is controlled by the accelerometer in an iPhone and supports live streaming from the video cameras using wifi. Designed for the consumer market, it provides the user with an augmented reality experience of flying (indoors or out) and currently supports some basic multi-player shootem-up games. Look at the Utube then let your imagination take over! These guys know they are onto something big – they disappeared almost immediately they walked off stage, no chance to examine the device or ask them about whether they’ve sold out yet to Sony. One to watch.

**Monetisation** There were several sessions on how to make money from the geoweb but few new ideas. The “freemium” model, by which users access basic facilities for free and then pay to upgrade to premium services, still seems a popular business model although there were few examples of serious money being made in this way. There was talk of buy outs at levels that would allow the twentysomething founders to retire to the Bahamas. Selling services to customise these applications seems the obvious step. Perhaps as one CEO confidentially put it – ‘the greybeards were actually the ones making money out of this stuff by plagiarising the best ideas and integrate them into their own enterprise solutions’.

**Summing it up** There were fewer completely stunning new ideas than in previous years but still plenty to think about. Also, there were some signs that perhaps the geoweb is maturing – the “separateness” of this community from the rest of the geospatial world seemed less pronounced. Making a profit in geoweb world still seems elusive except for the market leaders, Google and Apple.



**Above: AR Drone – the latest in autonomous airborne vehicles.**

*Photo courtesy of James Duncan Davidson and O'Reilly Media.*



**About the author**  
Andy Coote writes for *GiSPro* and is chief executive of *ConsultingWhere Ltd*, an independent IT consultancy specialising in research, strategic and technical consultancy to the geospatial industry. You can contact him at [www.consultingwhere.com](http://www.consultingwhere.com) or on [twitter@acoote](mailto:twitter@acoote).



Max Craglia of the EC's Joint Research Centre (JRC) opened proceedings.

to give the keynote presentation but Professor **Jacqueline McGlade**, Executive Director of the European Environment Agency? And this was certainly an inspired presentation following the welcome from our Polish hosts and a video from her boss, **Janez Potocnik**, the EU Commissioner for the Environment. McGlade's main message was a call for those delivering Inspire to fully understand the speed with which various trends were affecting the availability and utility of environmental information; the importance of the spatial element; the need for seamless integration with space-based systems and with the 'sensor web'. And the realisation that public interest – in a much more interactive mode than previously – is growing and should be encouraged.

**Keeping an eye on Earth** McGlade sees these trends being encouraged by more openness on the part of institutions and governments; much cheaper IT infrastructure (not least through using the 'cloud') and the availability of 'crowd sourced' data. A flagship resource sponsored by EEA is the 'Eye on

**Clouds over Krakow** Over 600 delegates from across Europe gathered in Poland in June to review progress on the Inspire initiative, share practice and visit a salt mine. . . **Robin Waters** reports with additional material from **Graham Vowles** and **John Pepper**.

KRAKOW AT MIDSUMMER is supposed to be hot, sunny and dry. Not this year. For the Inspire Conference 2010 it was cold, cloudy and wet. Normally the temperature in the salt mines (a constant 14 deg) contrasts with the 25+ outside. When we descended in the miners' cages for the gala dinner we actually felt warmer! And what a sight! Five hundred or more delegates seated in a huge cavern with a brass band on the balcony at the back and a jazz trio on the stage. Fortunately they didn't play simultaneously!

Organising the descent of this number of people in a three-storey lift (8 in each cage) was quite a feat. The rest of the conference also went like clockwork apart from a very long registration queue on the first day and a hiccup with the microphones for one session in the main hall of the 600 year old Jagiellonian University. Not that the age of the hall was to blame! In fact the Auditorium Maximum is not a Roman amphitheatre but a state-of-the-art modern conference venue capable of accommodating even more than the 600+ delegates attending the Inspire Conference.

Inspire is all about the environment, right? So who better

Earth' portal, which is worth a visit at <http://eyeonearth.cloudapp.net/> – not least because it is available in 26 languages! She certainly reinforced our perception that the Inspire SDI is part of the framework within which environmental data will be delivered. However, there was a distinct impression that if we don't deliver, there are alternatives for a lot of applications – even if they are not 'official' or definitive. Almost as an aside the EEA



'Pass the salt please' – 600 sit down for dinner below ground.

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**What it's really about is the coordination of organisational behaviour.**

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has also announced a deal with ESRI that provides free access to ArcGIS10 (in the cloud?) for all of the 900 organisations that contribute to the European environmental monitoring network.

The other interesting plenary session was on 'the Global Dimension' with speakers from the World Bank, the UN and from the Biodiversity Observation Network. **Gavin Adlington** is the WB's Land Programme Team Leader for Europe and Central Asia where he travels incessantly setting up and monitoring projects that deal with many elements of SDIs. He showed that Inspire was seen from his clients' perspective as a world leading example of co-operation with spatial data. Many of the countries being helped are already members of the EU – particularly in the Baltic or Balkans – as well as potential members such as the other former regions of Yugoslavia.

**Suha Ülgen** advises the UN on SDIs and gave a fascinating insight into the UN bureaucracy which is very similar to a typical national government. They have the familiar problem of trying to coordinate spatial data across many disparate agencies with several (e.g. FAO, UNDP, UNEP) already having powerful GIS capabilities. But his most telling slide was the quote from **Bob Schell** of OGC "Interoperability seems to be about the integration of information. What it's really about is the coordination of organisational behaviour."

**Slowing the 6th extinction** **Bob Scholes** brought us all down to earth with a bump – the title of his talk says it all: "2010 Year of Biodiversity; How informatics can help slow the 6th extinction". This was depressing stuff. All his graphs show how little progress – if any – is being made to stem the extinction of species from insects to corals and mammals. Just monitoring the process must be depressing – but it needs a spatial framework to make it work at all.

It was left to **Alessandro Annoni** – head of the SDI Unit at the EC's Joint Research Centre and 'Mr Inspire' if there is one – to sound a more upbeat note for the success of the Inspire process so far and its challenges for the future. He challenges us to build on a very successful model for international co-operation – the Inspire process of collaboration and consensual decision-making on the rules and guidance that enable the interoperability of spatial data. We can promote the successes of Inspire in other geographies and in other disciplines; we should try to internationalise Inspire specifications and we must look to the next generation of SDIs – perhaps following many of the trends identified by Professor McGlade?

**Plenaries, workshops and more** The plenary sessions (the final one being entirely in Polish for local participants) were of course only a small part of the conference. Several workshops were run on the Tuesday with delegates invited to a reception by Krakow council in the evening. The parallel sessions

*The main hall of the 600 year old Jagiellonian University was able to comfortably absorb the conference.*



produced over 180 separate presentations with themes running from the truly academic though commercial developments to practical implementation. We understand that the session on legal issues was packed out. Yet a session to hear the results of a data quality questionnaire was sparsely attended – mainly by those reporting!

Although budgetary constraints and the lure of the World Cup kept some Brits away, there was a strong UK contingent in Krakow. **Graham Vowles**, now an independent consultant, is a veteran of Inspire drafting process and chaired one of the sessions. This concerned education, training and awareness – which will strike a chord with many of us who follow the UK Location Programme and its relationship to Inspire. There are clearly a lot of pan European, regional and national efforts to address this but arguably they are not well integrated or even well known outside specific geographies or interest groups. Graham reports on an impassioned presentation on "How to integrate bottom-up approaches and voluntary initiatives, with INSPIRE based on SDI, GMES, GEOSS and SEIS activities", a Danish case study on "Capacity building for INSPIRE" at a national level and the "INSPIRE Academy training programme" and how this is being used to increase GI awareness among local authorities in Poland. A final suggestion from the session was that some form of Discovery Services for Education and Training – in the same way that Inspire provides discovery services for data and services. Although not in this session, Michael Nicholson from Intelligent Addressing sought to share his experiences of getting several hundred local authorities to cooperate on the NLPG.

**Busy Brits to the fore** **Prof Ian Masser** was very much in evidence – promoting the new version of his book Building European Spatial Data Infrastructures – and **Ray Boguslawski** and **Keith Murray** from the UK Location Programme gave presentations – the former on overall progress in UK and the latter on the use of Linked Data.

**Alan Moore** from Forth Valley GIS presented their unique experience of becoming a local authority company with three councils as shareholders. The business aspects were the subject of intense discussion after his presentation, which took place at a workshop on regional SDIs sponsored by the eSDI-Net+ project.



*... the Inspire process of collaboration and consensual decision-making on the rules and guidance that enable the interoperability of spatial data.*





### GI Veterans from the class of 1995.

**Keiran Millard** from HR Wallingford and **Andrew Woolf** from NERC presented papers on marine issues and UK environmental data modelling respectively.

**John Pepper**, now running his own consultancy, was disappointed with the coastal and marine content of the conference and will be actively seeking to ensure that next year there will be a better balance. He was concerned that Professor McGlade's presentation, while quite inspirational, was perhaps too wide ranging and did not focus on specifics. But overall his impression, shared by many of us, was that this conference was really showing implementation under way: theoretical stuff was giving way to practical issues being dealt with by individuals and organisations finally getting to grips with the real world. **Clare Hadley** from the Ordnance Survey has chaired the Data Sharing Drafting Team and

introduced the good practice guide which extends the bare bones of the regulation. She also tells me that the classical music scene in Krakow is second to none.

One of the joys of attending conferences is to meet up with friends and colleagues on a regular basis. This conference, originally entitled the EC GIS workshop, was first convened in Brussels in 1995. **Karen Fullerton**, from JRC, has organised every one of the sixteen as they get bigger and better. She grabbed the three other survivors from the Brussels meeting for a photo opportunity. **Pal Levai** from Hungary, **Giorgio Saio** from Italy and yours truly! But only Karen and Giorgio have made it to all of them.

If I were to choose a 'buzzword' to describe the conference I think it would have to be 'cloudy'. Lots of grey clouds outside. Lots of talk of cloud computing inside. A cloudy outlook for some of the environmental programmes, for which we provide the infrastructure. Let's hope that Scotland – the venue for next year's conference will turn on the sunshine – among other things – to welcome us to the UK! **Cameron Easton** of the Scottish Government delivered the invitation but I am told that the venue hasn't yet been chosen – it could be Edinburgh, Glasgow or Aberdeen. But don't get me wrong, this was the best Inspire conference that I have ever attended – good content, good venue and good organisation.

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

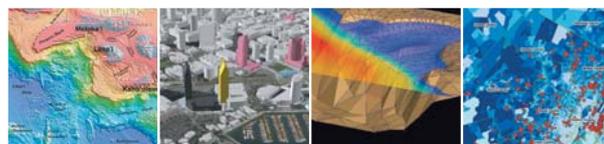
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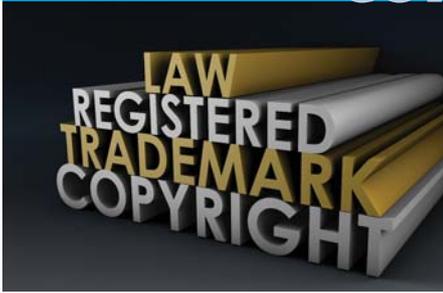
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# open source compliance



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SOFTWARE IS EVERYWHERE – in mobile devices, commercial equipment, desktop applications and network servers. The productivity to create the software that powers these applications stems from intensive reuse, with developers increasingly supplementing custom coding with

outsourcing, commercial libraries and open source.

Open source software has become a significant component of all software development activities, intentionally and sometimes unintentionally, thanks to the abundance of available code, its apparent free cost, and high degree of stability and security. But while open source appears to be cost free, it is not without obligations, as it comes laden with licensing and copyright responsibilities that are enforceable by law. Even accidental infringements can result in fines and injunctions, making it prudent for software

## Options for Managing Open Source Licensing

Licensing compliance assessment is often undertaken in advance of important transactions such as a company investment, merger/acquisition, or a major product release. However, mitigating business risks associated with software licence compliance is best addressed by adopting a process within an organisation's Software Development Quality Process. The following options are available to organisations to address licence compliance at different points in the development process.

- 1) **Do-nothing:** Popular up until recently, this option ignores the compliance issue because it carries the lowest up-front cost, but bears the highest business risks and largest corrective costs post market introduction.
- 2) **Developer training and project planning:** Some companies consider that proper training and

## The cost of open source licensing compliance

Although open source software can be seductively free it can still come with obligations and licensing restrictions. Infringements can be costly, argues **Kamal Hassin**, the later they are discovered in the production cycle. Now there is a way to detect them at the programmer's workstation.

development organisations to manage their licence obligations as they incorporate software from a variety of sources. Lack of knowledge about these obligations and ignoring them can lead to dire consequences for technology firms, and some of the ensuing legal cases have been well documented.

This does not mean that open source usage should be avoided. The cause for concern is not with the use of open source, but rather with unmanaged licensing obligations. It is important for software organisations to establish appropriate IP policies that determine what specific open source licences and licence terms are acceptable for their business before products go to market.

There are a number of approaches to licence management, ranging from "do nothing" to real-time automated scanning of software to detect and report licence obligations. All of these approaches can be viewed from a cost perspective, to maximise developer productivity while minimising legal risk. A cost model for software legal compliance is presented in this article. This cost model takes into account factors such as the extent of the open source usage in a product, the extent to which the content violates an organisation's licensing policies, the probability of detecting a violation after a product launch, versus the cost associated with fixing the problem at different stages of the product development life cycle. The model examines various approaches and scenarios for managing licence compliance as part of a Software Development Quality Process.

project planning is sufficient in normal situations. This is, however an overall expensive proposition given the growth in software licence diversity and the cost of developer training. With this option, compliance depends solely on developers and there is still no assurance of legal compliance before going to market.

- 3) **Post-development licensing analysis and correction:** Taking action later in the project lifecycle can take the form of external or internal auditing, and impacts the final stages of testing and quality process. This option does not impact on development workflow and can be automated with software tools designed for this purpose. Nevertheless, if licence violations are discovered, this will prolong the project lifecycle resulting in increased costs and unpredictable delays to the delivery of the final product.
- 4) **Periodic assessment:** Periodic licensing analysis during development leads to corrections along the way if licence violations are detected. This type of analysis can be automated and tends to be less expensive than post-development assessment since changes and re-tests can be done earlier in the development cycle.
- 5) **Real-time preventive assistance at the developer workstation:** The most pro-active measure for



**The cause for concern is not with the use of open source, but rather with unmanaged licensing obligations.**



software licensing compliance is to detect licence violations immediately and automatically at the developer workstation in real-time. The development process is not disturbed, and the cost of corrections is minimised, as any necessary corrections are done immediately without involvement of other resources and without need for re-testing. This process can be automated via software tools that are unobtrusive and do not require developer training in matters of legal compliance. Managing licensing in real-time is generally the most cost efficient and lowest risk option in the long term.

Size of Software Project & Development Organization		(A) No Legal Compliance Assurance	(B) QA Stage Analysis & Correction		(C) Preventive Legal Compliance Assistance & Build Stage Verification & Correction		
# Files (components) in Project	# Developers associated with Project	Cost of dealing with legal compliance in the field	Cost of IP Policy Compliance	\$ Savings vis-à-vis (A)	Cost of IP Policy Compliance	\$ Savings vis-à-vis (A)	\$ Savings vis-à-vis (B)
100,000	200	\$420,000	\$170,500	\$249,500	\$17,220	\$402,780	\$161,280
40,000	70	\$168,000	\$71,400	\$96,600	\$6,888	\$161,112	\$64,512
8,000	13	\$33,600	\$14,200	\$19,400	\$1,378	\$32,222	\$12,902
2,000	3	\$8,400	\$3,570	\$4,830	\$344	\$8,056	\$3,226

*Above: Figure 1: Costs and savings for various legal compliance approaches.*

### Automated software scanning and licensing management tools

Fortunately, there are tools available to automatically scan software to detect all licensing policy violations. These tools can operate on demand, on a periodic schedule or in real-time within the development process. Generally the tools find compliance problems sooner, thus lowering the overall cost of licence compliance. Some automated software scanning solutions enable software analyses to be done in accordance with corporate IP policies. These lend themselves well to instituting proper record keeping and safe software development practices. Most software IP scanning and licensing analysis tools have an accuracy of between 80% and 98% depending on the accuracy of the analysis engine and the size of the open source reference database.

**Analysis Assumptions** The Licensing management cost model is driven by a series of parameters. To illustrate, we will use the following base case as an example.

#### Project Open Source Usage

- 45% of software components in the project are open source.
- 4% of the open source content is in violation of the corporate IP policy.

#### Automated Software Scanning Accuracy

For scenarios where an automated solution is used we assume:

- 95% of licensing violations will be detected at the system audit stage before a product is released.
- 98% of licensing policy violations will be detected at the developer's workstation if a real-time solution is employed.

#### Costs to Detect and Fix Licensing Policy Violations

- \$20,000 average cost to handle licensing non-compliance discovered in the field. The worst case is to have licence or copyright violations discovered in a released product. In such cases

the costs are much higher due to involvement of legal personnel and the corrections necessary after product release. Not taking into account the prospect of going to court, the costs can be anywhere between \$5,000 and beyond \$50,000.

- \$1,500 average cost to handle licensing non-compliance discovered during product QA. A policy violation detected at the QA testing stage usually involves testing personnel, development managers and developers in order to decide what is to be done and to implement the necessary correction (for example, replace the offending code). This may take more than 1 person-day of work and usually ranges between \$500 and \$3,000. For this example, we will assume \$1,500 cost of fixing a problem at the QA stage.
- \$40 average cost to fix a policy violation discovered at the developer's workstation. This may take only minutes of the developer's time and does not involve any other expensive resources. Therefore, the cost, based on the time taken, for fixing issues right at the developer workstation could range between \$25 and \$60.

**Analysis Scenarios** To illustrate a diversity of project scenarios we have evaluated a range of project sizes varying from 2000 to 100,000 code files.

For each project size we have calculated the overall cost of open source licensing compliance using the following approaches:

- (A) Do Nothing.
- (B) Post-development, pre-release licensing compliance assessment and correction.
- (C) Real-time automated desktop scanning with final licensing compliance assurance at the build stage.

**Results** Figure 1 above displays the estimated cost and savings associated with the three licence management approaches described above.

**Conclusions** The results in Figure 1 are illustrative of a general pattern, and using the model we have varied the assumptions without affecting the generality of results.

- The larger the project, the higher the number of components and the larger the number of corresponding licence violations, thus there is a higher probability of being "caught" in the field,



**Some automated software scanning solutions enable software analyses to be done in accordance with corporate IP policies.**



# open source compliance

with the associated cost of adjustment.

- Ignoring licensing compliance can be costly, and it is difficult to put an upper bound on the cost of shipping non-compliant software.
- Corrective analysis, using automated tools in regular intervals and during QA reduces the overall cost significantly.
- Combining real-time IP management at the developer's desk with scanning at QA or build time further reduces the cost of potential non-compliance significantly.



**Combining QA testing with preventive tools for software licence management... can raise the level of savings to over 85%.**



Proper licensing and copyright compliance, implemented as part of the normal QA process, can yield savings of 40% - 65%, compared to the potential costs of non-compliance. Combining QA testing with preventive tools for software licence management at the developer's workstation can raise the level of savings to over 85%.

- *Protecode provides a comprehensive solution for managing open source software licences. Protecode System 4™ uses lightning fast code scanning that works behind the scenes in real-time with code libraries, build processes and desktops to detect and report open source licences relative to company-defined policies.*

*Built for ease-of-use and minimal intrusion into existing development processes, Protecode cost-effectively manages the lifecycle of open source licensing obligations. [www.protecode.com](http://www.protecode.com).*

## About the author



*Kamal Hassin, Director, R&D and Product Management at Protecode ([www.protecode.com](http://www.protecode.com)), is a thought-leader in the area of open source licensing and is the author or co-author of a number of papers on Software Intellectual Property management. Kamal has a Bachelor of Engineering degree and a Masters degree in Technology Innovation Management from Carleton University. He can be reached at [khassin@protecode.com](mailto:khassin@protecode.com).*

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Chris Holcroft is Director and CEO of the AGI.

THE AGI TEAM is busy preparing for the annual conference. The programme of content is fully complete and we are thrilled to have lined up some excellent plenary speakers for you:

**Robert MacFarlane** is Assistant Director in the Civil Contingencies Secretariat, Cabinet Office. He is responsible for a range of matters including research strategy and the programme of Central Government Emergency Response Training.

**Lai Wah Co** is Head of the Confederation of British Industry (CBI) Economic Analysis Group, responsible for the organisation's work on monitoring UK and international economic developments, overseeing the UK economic forecast and analysis of business surveys, and informing the CBI's stance on monetary policy.

**Andrew Hudson Smith** of CASA and Editor-in-Chief of *Future Internet Journal* has featured widely

**UK Location Programme** AGI event-managed workshops in Manchester and London in June. Members of the UK Location Programme were able to present a concise look at what the UK Location Information Infrastructure will deliver and what benefits will derive from it. In particular it addressed:

- *What user steps are needed to meet INSPIRE obligations?*  
*What users can do and how they can benefit from better access to location information as part of building their own location strategy?*  
*How initiatives like the UK Location Programme and data.gov.uk are working together and what that means for users.*  
*What benefits INSPIRE will deliver in the longer term?*  
*What Linked Data is and why does it matter?*

## AGI GeoCommunity'10

Whilst a hot summer is upon us it has been far from a siesta for some. Carry on reading and you'll get a flavour of just some of the many things happening in the world of the AGI, explains **Chris Holcroft**.

in the media. His recent projects include MapTube, TalesofThings and SurveyMapper, he is also author of the digital urban blog which attracts over 2000 daily readers and was recently voted one of the Top 5 Web 2.0 Blogs by *PC Pro Magazine*.

**Nigel Shadbolt** is Professor of Artificial Intelligence (AI) and Deputy Head (Research) of the School of Electronics and Computer Science at the University of Southampton. In June 2009 he was appointed by the Prime Minister to help transform public access to government information. In May 2010 he was appointed by the Coalition Government to the Public Sector Transparency Board responsible for setting open data standards across the public sector and developing the legal Right to Data.

With an excellent paper programme, exhibition and a range of activities at excellent delegate rates, the annual AGI Conference cannot be missed. For more information see: [www.agigeocommunity.com](http://www.agigeocommunity.com)

### Dangermond delivers AGI Educational Lecture

AGI was extremely pleased to have **Jack Dangermond** deliver its 2010 Annual Education Lecture in June. Once again the AGI lecture was held at University College London (UCL) and delivered in partnership with UCL's Centre for Advanced Spatial Analysis (CASA) – a very successful formula.

Jack Dangermond was in the UK to receive a Patron's Medal from the Royal Geographical Society (RGS). Jack not only provided a range of thoughts and comments that captivated the audience, but afterwards he spent time chatting with attendees including students and staff from various institutions. In discussions with AGI staff he also recalled the founding of the AGI and congratulated its progress.

In addition, the AGI Suppliers' SIG held a meeting in London in July to get a closer perspective of the UK Location Programme, the role of Ordnance Survey in the project and the shape of likely commercial opportunities.

**Early AGI Chairman honoured** AGI was extremely pleased to see an important GI figure in both commercial and academic spheres being honoured with an MBE 'for services to geographic information'.

Professor **Peter Woodsford** has been one of the major figures in the Geographic Information (GI) industry for more than 35 years. At the birth of the industry, he helped to launch Laser-Scan, which became a well recognised brand internationally, and subsequently he held technical management and executive roles up to position of chairman of its successor 1Spatial (retiring in late 2009). He has also been involved with Snowflake Software since 2002 and is currently its non-executive chairman.

Peter, who was elected AGI chair in 1990, joins a number of ex AGI chairs honoured by The Queen in recent years.

**AGI Foresight Study** Over the past year the AGI has been exploring the future of the geospatial industry in the UK in the first public foresight project of its kind. The foresight study has a medium-term horizon of 2015, as we believe that any longer-term assessment is not feasible or valuable. In seeking diverse points of view, the study invited almost 40 industry opinion formers to contribute papers in their particular expertise, covering data and technology, vertical market sectors and policy drivers.

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**The foresight study has a medium-term horizon of 2015, as we believe that any longer-term assessment is not feasible or valuable.**

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For more information see  
<http://www.agi.org.uk/foresight/>

**AGI CPD Scheme** The AGI's CPD scheme provides an ideal way for members to obtain a certified and formal record of their CPD. The scheme is deliberately designed to mesh well with the CPD requirements for gaining and maintaining Chartered Geographer (CGeo) status, and we envisage that many members will go on to gain this further qualification. They will be able to use the annual AGI CPD certificates to enhance their CGeo application. How the scheme works:

- Members must register for the scheme.
- AGI will issue an Annual CPD Record spreadsheet to each member of the scheme upon registration.
- Scheme members update the Annual CPD Record spreadsheet throughout the year.
- AGI will keep a record of attendance at each AGI event which has points allocated at the end of each year.
- AGI will certify the Annual CPD Record and return it along with an Annual Certificate of CPD Attainment to the scheme member.

For more information see:

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

**New AGI Annual Award** Every year AGI celebrates excellence in the sphere of geographical information. The AGI Annual Awards are held every November and this year we are very pleased to announce a new award sponsored by ConsultingWhere ([www.consultingwhere.com](http://www.consultingwhere.com)) for Innovation and Best Practice (Business Case & ROI). The award has been created to recognise "best practice" in the financial justification of investment in geospatial technology. It is open to organisations in any sector. Business Cases that have been successfully submitted during 2009/10 until the closing date of application are eligible for submission.

For more information about the AGI Annual Awards see <http://www.agi.org.uk/agi-awards/>



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

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# conference report



*The BCS' symposium attracted over one hundred members spread over three days.*

CARTOGRAPHY IS ALL about visualising data. As GIS professionals we should be able to show clearly the results of our data collection so that our customers, whether internal or commercial, can take informed decisions.

We therefore overlook the significance and influence of maps at our peril. This came home to me during a presentation at the British Cartographic Society's 2010 symposium, Talking with Maps.

Professor **Peter Vujakovic's** specialism is the way cartography is used in the media, especially the "quality" press. As he observes, it's an important area as it is where many learn about geography. People don't question maps. Too often they are regarded as the last bastion of authority. Alas, they are often full of 'misinformation and metaphor'.

Prof Vujakovic has done two major surveys of thematic mapping in the broadsheet press. The first

example did no favours to the writer of the accompanying article who was aiming to scare Americans; the only US territory within range was a tiny slice of Alaska!

As Prof Vujakovic concludes, 'there is a lack of understanding of basic geographical and cartographic principles by the media that results in poorly constructed or even erroneous maps.'

**Cartoblography** No risk of things going so wrong when the effervescent Dr **Ken Field** is in charge. His recent area of study has been "cartoblography" or mapping the spatial context of micro blogging. He argues that with the growth of social networking place is arguably less relevant than the importance of location.

Our mobile phones increasingly reveal where we are (or at least where our phones are). Tweeting enables very rapid response to news, like Number Ten's announcement of free Ordnance Survey data. But it can also enable us to track those we follow geographically, but be careful; announcing to the world that you're off

## Talking about maps

In June, the Editor joined cartographers during their annual symposium to learn that there's rather more to maps than eye-catching prints. They can be used as propaganda and even to persuade you that you are out of missile range when you're not!

was during the Kosovo crisis ten years ago where maps on the situation accounted for 55% of all news maps between January and July 1999. He discovered that maps' authors often got the taxonomy wrong. Inappropriate typefaces and sizes led the reader to assume greater prominence of one territory over another. With the decision of whether NATO was to intervene or not, these were not trifling matters.

More recently his studies have alighted on the way the ranges of various North Korean and Chinese missiles have been represented. Totally misleading map projections were often used leading the reader to think that particular countries are within range of the missiles when they're not while others, not shown, were. One

on holiday for a couple of weeks in the hill country is an invitation to have your house burgled.

Dr Field has examined the Twitter map API and found it wanting. But used in concert with other map services and GPS derived coordinates, a much richer cartographic record can be created. His work, which is funded by the EU's JISC Mobilising Remote Student Engagement (MoRSE) project, has seen him taking a team of students to Malta equipped with mobile phones and mapping software.

**Workshops** A pre-lunch choice of workshops found me opting for **Giles Darke's** "Making Sense of Statistics on Maps". Giles is that rarity: an independent map consultant and he knows his stuff when it comes to designing maps to show statistical information. Choose the wrong colour or data classification and no one will understand what the map is trying to say. However, whilst a list of statistics may show no clear trend a geographical pattern can emerge with good cartographic design. Nevertheless, whilst it is not usually the intention of mapmakers to mislead it can happen because as Giles observes, 'there is no foolproof way of presenting a set of data on a map'.

By way of illustrating this point he showed us a map of the alligator population in the US with a state-by-state graphic that began with "up to 100 alligators". Surprisingly, the whole of the mid-West seemed alive with alligators!

For a start he recommended a useful little website titles [colorbrewer.com](http://colorbrewer.com) that shows which



*Above left: Dr Tim Rideout (left) accepts the Stanfords Award for Printed Mapping on behalf of XYZ Digital Mapping Company.*

*Above right: Peter Alexander (left) of The Highland Council is presented with the BCS Award. Images: credit to Martin Lubikowsk.*

colours will work together in a sequence for display either on screen (RGB) or for printing (CMYK). But then Giles cautioned against the GIS default of equal sized classes for data, e.g. 0-10, 10-20, 20-30 etc. Although easy to understand such classification rarely reveals what is informative about the data.

To get us thinking about this he gave us two sets of statistics to sort out into meaningful ranges for mapping. Both were real-world data so we learnt that while Norway and Finland were the highest consumers of coffee in the world (over 10kg per annum), Ireland and New Zealand were the lowest (under 1kg per annum). In between there were plenty of countries in the 4-7 kg range but fewer outliers.

Even more challenging was how to deal with the spread of Macdonald's restaurants around the globe. After the US's whopping 12,804, the next country is Japan with 3,598 before a raft of countries in the 701 – 1154 range (interestingly, France that supposed bastion of traditional cooking and opponent of "Le fastfood" has almost as many outlets as the UK and Germany). Below 701, the next country (Taiwan) has only 338 ahead of a fairly even spread of 30 countries down to Brunei with just one. Representing this cartographically is difficult and as Giles conceded, 'there is no easy way'.

**3D's the way or is it?** Although we are used to 2D maps on screen or paper, that is bound to change in the future as we begin to use 3D models, already pioneered by games. We of course live in a 3D world, yet to date attempts to realistically model it have predominately been in 2D, says **Rollo Home**, operations director of Met Geo, a company that models urban environments using its CityGRID software. In any case, what is "realistic"?

Although the EU is more advanced than the UK in using 3D modelling techniques for planning and development, currently there is a lack of clarity over standards, explained Rollo. Data should be in CityGML format but after that there are conflicting standards over the classes of the level of detail between the Open Geospatial Consortium and BuildingSMART from the construction and CAD user side.

Despite acknowledging that some see a UK national 3D dataset is a solution looking for a problem, Rollo believes such models are a useful base on which you can lay data. In his experience 'even professionals in development who you expect to understand 2D, gain real insight with 3D'. He acknowledged too that it can get in the way of the decision-making process but there are big advantages for record purposes, conservation and public consultation.

**Crowd sourced mapping** Chris Osborne believes that crowd-sourced and real-time datasets are presenting new challenges as well as opportunities for visualisation. Chris is head of business development at ITO World Ltd, a consultancy that specializes in geospatial analysis for the transport industry. The speed with which data can be

assembled via the crowd was ably demonstrated by Chris in the context of the Haiti earthquake in January. With what mapping capacity there was destroyed by the quake, OpenStreetMap was quickly able to create a default base map for relief operations.

Chris' next example was nearer home. A challenge for mappers is to get a simple message over quickly. The benefits of London's congestion charge are complex balanced against a simple message of 'this is going to cost you'. Savings in CO2 alone make the charge worthwhile, argued Chris. And staying with the carbon saving, Chris showed us a brilliant visualisation of how the Icelandic volcano shutdown more and more air traffic in April: as the air routes closed so the CO2 saving rocketed.

**The final frontier?** In some respects, and with apologies to Star Trek, the sea is really man's final frontier. We know more about Mars or the Moon than the deep ocean. While 70% of Earth is covered with water, only 5% has been explored. Yet 'demand for information is outstripping our ability to map it', says John Pepper formerly with the UK Hydrographic Office and now a consultant.

The demand for mapping and charting is driven by spatial planning and asset management. Even that ever-demanding font of simple questions, *The Sun*, recently ran a headline "Why is 75% of UK sea space not mapped?" Maps are needed of the coastal zone, the continental shelf and the deep sea. Fortunately recent legislation in the UK like the Marine & Coastal Access Bill coupled with the new Marine Management Organisation that came into being this year, are helping drive this demand coupled with rapid advances in technology such as lidar, acoustic ping-to-chart technology, automated underwater vehicles (AUVs) and real-time ocean observation systems.

The final speaker, **Tom Tims** of STAR-APIC, examined the role of the cartographer in the mash-up age. He cautioned that in the rush towards software as a service and free data it is not without cost as it still needs training and learning time.



**With what mapping capacity there was destroyed by the quake, OpenStreetMap was quickly able to create a default base map for relief operations.**



### The 2010 Award Winners

**Stanfords Award for Printed Mapping:** XYZ Digital Mapping Company awarded for their Postcode Sector Map – Sheet 22.

**Avenza Award for Electronic Mapping:** British Antarctic Survey for Polarview – Antarctic Node

**John C. Bartholomew Award:** Dr Kenneth Field from Kingston University and Dr Linda Beale from Imperial College London for their Geo-Genalogy Irish Surnames Map.

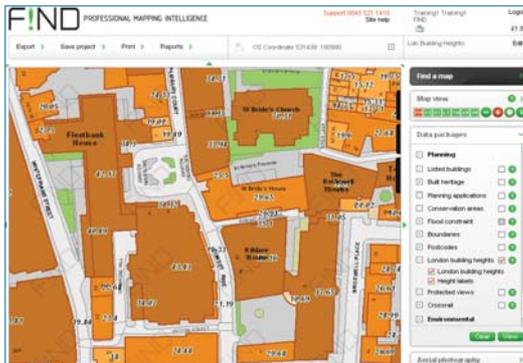
**Ordnance Survey MasterMap® Award for Better Mapping:** The Highland Council for 'Inverness City Main Developments 2010'. The Council claimed this award for creatively using OS MasterMap to define colours and textures to render a semi-realistic impression of the city of Inverness whilst maintaining the precision of the original product.

**The British Cartographic Society (BCS) Award:** The Highland Council.

**The Henry Johns Award:** Alexander Kent of Southampton University and Peter Vujakovic of Canterbury Christ Church University for the best article in *The Cartographic Journal* entitled 'Stylistic Diversity in European 1:50 000 State Topographic Maps'.

**Honorary Fellowship:** Ken Atherton, for many years of devoted service to the Society.

## Interact with the cloud



Online mapping website, FIND, has launched a London Building Heights map that shows buildings with height points superimposed; just like spot heights traditionally shown on walking maps for hills and mountains. The map shows the average and maximum height of any London building, its area and volume, and the estimated number of residential and commercial floors.

### MobileMatriX supports Viva

The latest version of Leica's MobileMatriX software provides full integration with the company's Viva GNSS, including full sensor configuration. Version 4.0 of the

software also offers the ability to post-process GNSS raw data directly in the field with support for L1 and L1/L2 post-processing. Raw GNSS data can be logged in the field, downloaded and post-processed in

the same application. In addition, this version and the ArcGIS edition support Windows 7 (32-bit only).

### ArcGIS updated

ESRI's ArcGIS 10 platform enables users to author data, maps, globes and models on a single integrated platform across desktop, server, web and mobile. Users can now perform desktop work with more responsive drawing performance, including smooth, continuous panning of data. The package provides easier access to most commonly used geoprocessing tools. A new search window in ArcMap locates maps, data and tools and a catalogue window built into ArcMap offers faster browsing and adding of data. For further information on new features, visit [www.esri.com/arcgis10](http://www.esri.com/arcgis10).

### Sharing spatial data

The new Intergraph GeoMedia SDI Portal offers governments and other organisations new capabilities for empowering browser applications with spatial data infrastructure (SDI). This offering provides a Web browser application for consuming, querying and visualising SDI Web services in a mapping context. With the portal, organisations involved in border security, emergency management, infrastructure management, land information management, public information services (including INSPIRE or any national SDI), mapping and cartographic production can be more easily shared internally or with government agencies, commercial businesses and the public.

### Merging spatial data

UK local authorities can now instantly pinpoint and contact all residents affected by road closures, floods or health hazards. GGP Systems has combined computer mapping and property ID technology to create address lists allowing mail merges for notification or consultation letters and other direct communications. The GGP Mail Merge Spatial Tool is useful for alerting people about planning consultations, road works, changes

in waste collection services and environmental hazard warnings.

## BRIEFS

ESRI has expanded its mobile GIS platform to support the iPhone, iPad and iPod touch. The new ArcGIS for iOS includes a free downloadable application from Apple's app store and an API for developers to build custom mapping solutions. The application includes: map navigation using native iOS gestures; search, identify, and measure tools; and the ability to share maps and GIS information with other iOS users.

Postcode Anywhere has launched its "MyServices" platform, which allows developers to rapidly build APIs and web services around any data either hosted on their own machine, or uploaded to the cloud. More info from: [www.postcodeanywhere.com/myservices](http://www.postcodeanywhere.com/myservices).

Avenza Systems has released its Geographic Imager 3.1 for Windows software, which adds geospatial functionality to Adobe Photoshop. New features include: added support for Photoshop CS5 (both 32 and 64 bit), Windows only, and added support for transferring Photoshop paths to MAPublisher for Adobe Illustrator (MAPublisher 8.3 required). The next release will include dynamic terrain shading and colourisation to digital elevation models within Adobe Photoshop. The release will also be able to export geospatial PDF documents from any supported spatial image source or scanned map document.

Intergraph's GeoMedia Motion Video Analyst Professional is a full-motion video analysis product designed to allow military, coalition forces and agencies to exploit and analyse full motion video from UAVs (unmanned aerial vehicles) and other moving vehicles. It combines with image analysis and surface analysis products to provide situational awareness and strategic decision-making capabilities.

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**AUGUST 2010**

**Intergraph 2010 International Users' Conference**  
**30 August - 2 September, ARIA Resort, Las Vegas, Nevada, USA.**  
 More information: www.intergraph2010.com

**SEPTEMBER 2010**

**RSPSoc 2010 – The Remote Sensing and Photogrammetry Society Annual Conference with Irish Earth Observation Symposium – Visualising the World: From the Sea-Bed to the Cloud-Tops**  
**1-3 September, University College Cork, Ireland.**  
 More information: www.rpsoc2010.org

**Magnificent Maps: Power, Propaganda and Art Finishes 19 September, PACCAR Gallery, British Library.**  
 More information: www.bl.uk/whatson/exhibitions/magnificentmaps/index.html

**AGI GeoCommunity'10 – Opportunities in a Changing World**  
**28-30 September, Stratford-Upon-Avon, UK.**  
 More information: www.agigeocommunity.com

**OCTOBER 2010**

**INTERGEO 2010 – 5-7 October, Cologne, Germany.**  
 More information: www.intergeo.de/en/englisch/index.php

**Everything Happens Somewhere 2010 – NLPG NSG annual conference**  
**20 October, Cutlers' Hall, Church Street Sheffield S1 1HG.**  
 More information: Email, Gayle Gander ggander@intelligent-addressing.co.uk

**NOVEMBER 2010**

**Trimble Dimensions 2010 – 8-10 November, The Mirage, Las Vegas, USA.**  
 More information: www.trimbledimensions.com

**GeoDATA 2010 Seminars**  
**10 November, Trades Hall, Glasgow.**  
**16 November, Hastings Stormont Hotel, Belfast.**  
 More information: www.training4gis.com

**NAV10: Position, Location, Timing: Everyone, Everything, Everywhere.**  
**30 November - 2 December, Church House, Westminster, London.**  
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# Address data as a service

Data is everywhere, but to make it useful, it needs to be in a standardised format, able to be linked and made accessible to other datasets. The National Land and Property Gazetteer (NLPG) has a mechanism that enables you to do this; its Unique Property Reference Number (UPRN).

## The NLPG has:

- 32 million address records in England and Wales including residential and commercial
- 'multiple occupancy' records
- updates available every working day from the statutory source of new addresses
- historic and alternative addresses
- classifications for properties
- a persistent reference number
- geographic coordinates for each property and street
- metadata on address currency
- 'under construction' records
- compliance with the British Standard for addressing BS 7666 (2006)
- the ability to provide INSPIRE-compliant address data.

## Accessing data

Intelligent Addressing (IA) offers NLPG data as a service, allowing users to communicate directly with the NLPG hub via web service APIs. These services provide NLPG data in an approved XML format specified by a Gov Talk registered schema, and are available 24/7 supported by a hardware failover architecture.

## The services allow users to:

- validate existing addresses
- identify addresses within a postcode
- query the NLPG to return matching information
- search and retrieve information instantly
- minimise the amount of data handling at the client side
- update and synchronise your NLPG data to the minute.

## Intelligent Addressing

IA is an information management specialist and data provider, focusing on land and property data, particularly addresses. As well as being the joint venture partner with local government in the development of the NLPG, IA also manages the national datasets for local government; the NLPG and the National Street Gazetteer (NSG).

Data is an essential yet high-cost resource to maintain. IA helps organisations find, utilise and manage the information that they need and provides services to any organisation that depends on the accuracy, manageability and versatility of its information.

## For more information, contact:

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