

SDI-AP

Spatial Data Infrastructure Asia & the Pacific Newsletter

August 2011

Spatial Data Infrastructure – Asia and the Pacific (SDI-AP) is a free electronic newsletter from the <u>Global Spatial Data Infrastructure Association (GSDI)</u> which is available in both English and Chinese language versions. The newsletter is produced for people interested in Spatial Data Infrastructure, GIS, remote sensing and geospatial data issues in Asia and the Pacific. It aims to raise awareness and provide useful information to strengthen SDI initiatives and support synchronising these activities across the region. Support for the newsletter is also provided by the <u>Permanent Committee on Geographic</u> Information for Asia and the Pacific (PCGIAP), a regional forum to enhance cooperation in the development of a regional geographic information infrastructure. The newsletter is currently being produced for GSDI by the <u>Centre for Spatial Data Infrastructures and Land Administration</u> at the University of Melbourne.



Vol. 8, No. 8

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Message from the editors

Welcome to the August issue of the newsletter.

This month there are a number of articles highlighting the SDI development in India where the government has recently released a new portal for data access and discovery (data.gov.in) as well as a new Remote Sensing Data policy.

If you have news or information related to SDI, GIS, RS or spatial data that you would like to share with the community (e.g. workshop announcements, publications, reports, websites of interest etc.), kindly <u>send us</u> the materials by the 25th of the each month for your contribution to be included in the next newsletter.

Malcolm Park and Serryn Eagleson (<u>Editors</u>), at the <u>Centre for Spatial Data Infrastructures and Land</u> <u>Administration</u>, The University of Melbourne.



Contributions

Thank you to the following people and organisations for their contributions to this issue: Kate Lance, and Baek Wonkug for news feeds, Jeremy Shen and Bruce Lan and colleagues for the Chinese translation as well as Shivani Lal, *GIS Development*, *GeoSpatial World* and *Asia Surveying & Mapping* magazine for directly contributing to the newsletter.

GSDI News



Memorandum of Understanding (MoU) sign between GSDI and ICA

During the 25th International Cartographic Conference (ICC) in Paris, France (4-8 July 2011), a Memorandum of Understanding (MoU) has been signed between the GSDI Association and the International Cartographic Association (ICA).

Call for proposals: GSDI Small Grants Program 2011-2012

The Global Spatial Data Infrastructure (GSDI) Association, the FGDC, and GISCorps have announced the Small Grants Program for the year 2011-12.

Application deadline: 31 October 2011. See under "Funding Opportunities, Awards, Grants"

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SDI News, Links, Papers, Presentations

UN Establishes a Committee on Global Geospatial Information

The United Nations Economic and Social Council (ECOSOC) voted to establish a committee on global geospatial information management in order to enhance international dialogue and cooperation on spatial data infrastructures. The UN recognizes the benefits of geospatial information for application to humanitarian, peace and security, environmental and development challenges as well as to responses to climate change, natural disasters, pandemics, famines, population displacement, and food and economic crises.

The committee will focus on helping countries to build the infrastructure for gathering, validating, compiling, and disseminating geospatial information, especially in developing countries. It will also compile best practices and case studies from national, regional and local scales. The committee will include experts from all member states and international organizations.

Source: Vector1Media

Portal augurs well for transparency

The unveiling of an official data access and sharing policy and the commissioning of a data portal (data.gov.in), which is on the anvil, will pave the way for digitally opening up the Central government data to the public. "The data portal will be having meta-data [data about data], which will facilitate the discovery of the data and access from the portals of respective government departments/ministries. At present, the data policy is likely to cover the Central government and all activities funded by the Government of India," said R. Siva Kumar, CEO of National Spatial Data Infrastructure, and head of Natural Resources Data Management System, Department of Science and Technology.

Source: The Hindu

Mapping India: another National GIS effort launched

India Government unveils new Remote Sensing Data Policy

The government has unveiled a new remote sensing data policy which allows all data of resolutions up to 1 meter to be distributed on a non-discriminatory basis and on "as requested basis".

The <u>Remote Sensing Data Policy 2011</u> (RSDP 2011) replaces a 2001 policy which allowed all data of resolutions up to 5.8 metres to be distributed on non-discriminatory and "as requested" basis.

The RSDP 2011, apart from opening up the remote sensing sector, will remove certain restrictions to facilitate more users to access high resolution data for developmental activities.



The RSDP however with a view to protect national security interests states that all data of better than 1 meter resolution shall be screened and cleared by the appropriate agency prior to distribution.

The policy adds that government users namely, ministries, departments, public sector, autonomous bodies, government research and development institutions, government educational, academic institutions, can obtain the data without any further clearance.

But private sector agencies which support developmental activities will need the recommendation at least by one government agency.

The RSDP-2011 comes into effect immediately, and may be reviewed from time-to-time-by the government. Thanks to Kate Lance for this item

The Development of National Spatial Data Infrastructure in Indonesia

Rudolf W. Matindas Deputy of Spatial Data Infrastructure National Coordinating Agency for Surveys and Mapping (BAKOSURTANAL). This presentation highlights the need for an SDI to reduce duplication, increase quality and expand international outreach.

Presentation available via slideserve

Marine SDI Course in Bangkok from OceanWise and CARIS

OceanWise and Caris delivered the inaugural 'Marine SDI' management course in Bangkok on behalf of the <u>East Asia Hydrographic Commission</u>. The first in a series of courses on the theoretical and practical aspects of hydrographic database design and management to support the development of marine, national and regional spatial data infrastructures (SDI) was delivered successfully from 20 to 24 June 2011 in Bangkok. The course was hosted by the Hydrographic Department of the Royal Thai Navy (HDRTN) on behalf of the East Asia Hydrographic Commission (EAHC) and supported financially by the <u>International Hydrographic Organisation (IHO)</u>.

Source: SDI Magazine

New trans-Tasman Research Partnership Launched in NZ

Taking public health research, crime research, hazards management, cultural mapping and city planning to the next level through advanced technologies is the goal of a new and unique trans-Tasman partnership for the University of Canterbury. The University will officially become the first New Zealand university to partner with Australia's Cooperative Research Centre for Spatial Information (CRCSI). Source: <u>Asian Surveying & Mapping</u> and Voxy.co.nz

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SDI Spotlight



This month's "Spotlight" feature is from Davood Shojaei who completed his Bachelor of Science degree in Surveying Engineering at University of Tabriz and Master of Science degree in Photogrammetry at KNT University of Technology, Tehran, Iran. Now, he is a PhD student and member of the Centre for Spatial Data Infrastructures and Land Administration in the Department of Geomatics (CSDILA) at the University of Melbourne.

3D Cadastral Visualization

"If I can't picture it, I can't understand it." – Albert Einstein



1. Land Registration

The rapid growth of population and decrease of natural resources have concerned decision makers about the land. During the years, the importance of land increased more and more and modern methods of land registration emerged to register the land more accurate and precise.

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In the past, ownership and land were registered based on simple natural characters on the earth such as rivers, rocks, trees or manmade objects like walls. Utilizing surveying techniques as a new discipline to measure the earth, could improve land registration methods. Surveyors provided services to the owners and governments to determine the position of ownerships on the Earth precisely. Therefore, this was a big step toward to new methods of land administration. Surveyors could create parcel maps based on these measurements which were named cadastral maps and governments started to manage the land and legislate new laws to compel owners to pay tax based on their properties.

2. Cadastre

The cadastre is the core of Land Administration Systems and the cadastral systems incorporate identification of land parcel and registration of land rights. The land parcel is stored in cadastral systems. Current cadastral systems are based on two-dimensional and attribute data are attached to parcels. In a wide definition, the cadastral systems contain right, restriction and responsibility attached to parcels. In the other word, cadastre deals with land and the rights associated to it. It can be considered to be a combination of geometrical and attribute data which is managed by the country's constitution.

3. 3D Cadastre

In major cities and especially in business districts, land value is becoming more important and as a direct result of that new types of land use have been emerged. These new types of land use are mainly located above or under or even beyond the physical parcel. These types of ownership put traditional methods of land registration, 2D cadastre, on a trouble. Based on 2D cadastral parcel, there are restrictions for registering of land in 3D situations. For example, 2D cadastre has limitation to register buildings on top of each other, infrastructure above and under the ground, ownership beyond the physical boundary of a parcel and apartments. In Addition, these 3D objects cannot be defined with legal objects in 2D cadastre and



therefore they cannot be registered as an object in the cadastral systems or even in 2D maps.

Consequently, by increasing occurrences of these complex 3D-situations, researchers are looking for solutions. These investigations are including the definitions of 3D physical objects, 3D registration, the 3D modelling and 3D visualization in cadastral systems.

4. 3D Cadastre Visualization

Regarding of importance of visualization in cadastral systems, it needs to be emphasized that visualization is considered to act as valid and reliable replacement for the real world in various diciplines. It is a potent communication media and utilized to convey an image of the real world. Therefore, this image should be enough clear to send a true message and intention to viewers. Computer visualizations are considered as a powerful communication tool to support a wide range of users from planners, architecture, engineers, public and etc. Although computer simulations and visualization tools are becoming more and more sophisticated, the understanding of the users perceptual and their responses are very important. It is important to consider that visualization is a tool for communicating with people who are less familiar with traditional visualization methods such as maps, plan views, etc.

In a cadastral system, visualization is one of the most important components. In 3D cadastral visualization, the virtual model of buildings and properties has to be sufficient and a set of core features of creating 3D buildings is needed to give a clear and quick understanding. Using wireframe graphics, hidden line and surfaces, surface shading and illumination, texture mapping and virtual reality can optimize the geographic visualization. In addition, some interactions and specifications are very important. For example, reasonable modelling of physical objects, lighting and shadowing, definition of viewpoints, linking, walking through, flying, real-time interactive navigation and etc. are a requirement today.

Furthermore, benefits of intelligent 3D cadastre can enhance communication via visualization, better decisions, better plans, better designs and better analysis for other related disciplines. The 3D cadastre can serve not only for cadastre and mapping but also to a wide variety of application fields, like tourism, environment protection, architecture, urban planning, real estate management, urban facility management, navigation, public, safety, Back to contents



disaster management, radio network planning, noise emission mapping and etc. 3D cadastre, 3D GIS and 3D city models are important keys for giving answers to current and future problems of city development and as a rich information data for e-Government.

Based on the above-mentioned goals, to achieving a platform which is specific for 3D cadastre visualization and meet its requirements, a research has been defined in this filed in the Centre of SDIs and Land Administration at the University of Melbourne in 2010 to investigate the role of visualizations as communication tool to convey understanding of correct 3D cadastral concepts, create an un-bias perception and evaluation, and extend a scientific toolbox in this area of research by a qualitative methodological approach. This research is included the assessment of current situation of applicable platforms to utilize a web-based technology to create an environment for data visualization and serving as a platform for cadastral purposes. The user of this platform can be public, architectures, real estates, land surveyors, land registers and etc with different type of interface and functions based on their roles and levels of expertise.

The editors remind our subscribers and readers that we welcome contributions for the *Spotlight* feature.

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GIS Tools, Software, Data

Application of Geographic Information Systems (GIS) to public health practice in India This study aims to create a comprehensive geospatial database linking health status of rural populations along with their social, cultural and environmental characteristics. Using this information, a community health index that will predict the health outcome of communities for a given set of physical and social factors will be devised. This information will then be provided back to community representatives, district and state policy makers to effect policy changes at the peripheral levels.

Source: Public Health Foundation of India

How are geospatial technologies being applied to achieve resilience?

With increasing global change comes a need to return ecosystems to their strongest natural health, and to ensure that our built environment can adapt rather than crumble from natural forces. Stepped-up ecological change is forcing new levels of land and infrastructure management, and geospatial technology is well-poised to analyze impacts, improve designs, and monitor outcomes. Source Vector1Media

Secret WWII Underground Bunkers and Tunnels Mapped with ProMark 100 GNSS Receiver

Beneath the surface of this tropical paradise in the city of Townsville on Australia's Sunshine Coast lies a still hidden maze of tunnels and underground bunkers, once said to be used by General Douglas MacArthur. Learning the secrets of this labyrinth that was a major WWII staging point for battles in the South West Pacific is the passion of Kevin Parkes, of Geo Positioning Services, a local Ashtech dealer. Source: Asian Surveying & Mapping

Walking Access Mapping System open for public use

The New Zealand Walking Access Commission opened the Walking Access Mapping System (WAMS) (<u>www.wams.org.nz</u>) for public use. It uses GIS technology to allow users to zoom in, using topographic or aerial view, to investigate publically accessible land in any part of New Zealand. It also offers a 'Tracks and Access Points' view that shows physical tracks and other access points to the outdoors. Source: Geospatial World and NZ Geospatial Strategy

Japanese Citizen Scientists Map Radiation

With the Japanese government only providing spotty information about the radiation leaking from the damaged Fukushima nuclear plant in the early days after the devastating March 11 earthquake and tsunami, a group of tech-minded citizen scientists set out to fill in the "black holes" in the knowledge base. They did so by crafting their own Geiger counters and handing them out to volunteers in the disaster area to measure the fallout. Source: <u>Asian Surveying & Mapping</u> and MSNBC



News from abroad

"This section has been included to highlight some of the developments happening outside the region which demonstrate SDI in action.

The Elevation Certificate - Part 1 by C. Barton Crattie, CFM and Wendy Lathrop (The American Surveyor) This article is intended to enumerate some of the primary errors surveyors make as relayed to us from individuals associated with the NFIP (National Flood Insurance Program) over the years. If we as surveyors do not shape up, it is entirely possible that we will be replaced by other methodology. Most sections of the standard Elevation Certificate will be visited briefly. As a professional, is it worth putting your license and financial wellbeing on the line for something you don't fully understand? The Elevation Certificate is an important document affecting large sums of money, far exceeding a monthly insurance premium.

<u>What Does An Integrated Geospatial Strategy Mean?</u> By Jeff Thurston (Asian Surveying & Mapping) From surveying to mapping to earth observation, technologies are continually changing. At the same time, regulations and laws are continually evolving. Meanwhile, financial budgets are fluctuating and the the demands of partners and the public are fluctuating. It is not surprising that so many different views about the 'best way forward' are being proposed. But which strategy is the most appropriate, which is truly representative of an integrated geospatial strategy?

U.S. FGDC endorses address data standard

The Steering Committee of the Federal Geographic Data Committee (FGDC) endorsed the United States Thoroughfare, Landmark and Postal Address Data Standard. The Standard is the culmination of efforts of the Address Standard Working Group (ASWG) formed by the Urban and Regional Information Systems Association (URISA) in 2005. The ASWG worked under the authority of the U.S. Census Bureau, which is the maintenance authority for the standard. The Standard contains four parts: address data content, classification, transfer, and quality. The Standard covers each of the main types of addresses found in the United States, and provides a framework for classifying them, understanding their component parts and attributes, testing their quality, and organizing them for exchange with other agencies and the public. Street addresses are the location identifiers most widely used by state and local government and the public. Street addresses are critical for administrative, emergency response, research, marketing, mapping, geospatial information systems, routing and navigation, and for law enforcement and first-responders in time of crises. The adoption of the Standard will provide local, state, tribal, and federal agencies with a means to share address information, as well as a methodology for improving response to emergency and non-emergency service requirements, with associated improvements in efficiency, effectiveness, and economy. "The United States Thoroughfare, Landmark, and Postal Address Data Standard will have a significant impact at all levels of government and is an essential component of the National Spatial Data Infrastructure," said Ivan DeLoatch, Executive Director of the FGDC. "We encourage government agencies, as well as others, to implement the standard for it provides a foundation for understanding and developing solutions for the many challenges in our communities."

Source: FGDC.gov and URISA.org - thanks to Wonkug Baek for this item

Geography: a world of opportunity

As part of its not-for-profit educational programme, Esri UK introduced the 'Palin effect' at its recent annual user conference. Here, Managing Director Richard Waite discusses geography with the veteran globe-trotter Michael Palin.

Source: <u>GeoConnexion</u>

On the Edge: Tracking Slips and Creeps

The Earth's surface is constantly shifting, being deformed as earthquake faults accumulate strain, and slip or slowly creep over time. Not long ago, scientists relied solely on seismometers to monitor the earth's movements. Today, GPS has taken prominence as an indispensible tool.

PANGA, the monitoring network covering the Pacific Northwest, uses GPS to monitor this movement by measuring the precise position (within 5 millimeters or less) of stations near active faults relative to each other. By determining how the stations have moved, ground deformation can be determined. Source: GPS World



When 3d pulls into the Station

The oldest railway station in Paris is being updated to haAndle newer, larger trains. Aa French company is using 3d scanning to keep the work on track. Source: Geo International

Advances in GIS Lead to Rise of Academic Pursuit of Spatial Humanities by Matt Ball (Asian Surveying & Mapping)

The continued advancement of Geographic Information Systems, with a depth of data related to physical locations and the ability to analyze events over both space and time, have given rise to the exploration of history. These capabilities have now spawned a new academic field known as spatial humanities where scholars such as historians, archaeologists, theologians, architects, sociologists, and literary theorists use the tools to map historical events as well as fictional worlds.

The ability to explore historical events through both place and time provides a whole new level of scholarship. Mapping reveals patterns and allow for the systematic analysis of layers of information that reveal new insights that are impossible to see out of context.

Examples of Spatial Humanities Projects (New York Times)

<u>New labels in Google Earth, including mouseover extents</u> – Google Earth blog Thanks to Ross Johnson for this item

Underground Cables mapped on Google

This is an interactive Google Map of the world's undersea communications infrastructure. The map displays the major cables that allow internet and other data to travel from the other side of the world, across the oceans and into your home. Thanks to Ross Johnson for this item

<u>Mapping the good earth</u> - Claire Harris reports in ECOS magazine. A free online resource has been developed to provide a three-dimensional digital map of the world's soils. Thanks to Ross Johnson for this item

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Articles

Reconstructing An Accident Scene by Daniel C Brown (The American Surveyor)

As do many police forces, the Royal Canadian Mounted Police (RCMP) investigates motor vehicle collisions as part of its mandate. The RCMP has trained some police officers to provide additional investigative expertise as collision analysts and collision reconstructionists.

SDI for Malaysian land administration

International Journal of Spatial Data Infrastructures Research (article under review, 2011)

Abstract: Land administration started with a manual land tax collection and subsequently moved towards a computerised system to improve the land information delivery services. However, three factors in non-technical integration issues (institutional, legalisation and social) have turned out to be the main problems for land administration stakeholders especially at national level for multi-government countries. The implementation of Spatial Data Infrastructure concept can reduce non-technical integration issues among land administration stakeholders to produce better decisions for a spatially enabled government. The result from this research could act as a guideline for the making of policy, strategy and management for land information delivery services for multi-government country (federal, state and local). This research will be useful for land administrators, land strategy management decision makers and multi-land researchers in land ownership, land use and land value fields.

The International Journal of Spatial Data Infrastructures Research IJSDIR is a peer-reviewed journal published exclusively on line by the Joint Research Centre of the European Commission. The aim of the Journal is to further the scientific endeavor underpinning the development, implementation and use of SDIs. The Journal is published free of charge and adheres to the Open Archives Initiative, which aims to facilitate the

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dissemination of electronic content.

Subsurface Modeling - Utilities Can't Be Seen... Can They Be Surveyed?

by Les MacFarlane, LS, and Jim Waite (The American Surveyor)

The accuracy and detail of above-ground surveying continues to be enhanced by satellite-based positioning, and optical technologies like LiDAR and laser scanning. Software is now available to greatly ease the reduction of large amounts of 3D geospatial data into useful digital models. Planners, engineers, architects, and analysts can then easily manipulate these models on a computer, viewing existing infrastructure in the context of a proposed design or redevelopment. With databases of 3D models increasingly available for infrastructure projects, virtual representations are possible early in the planning stage, presented in a context that is readily understandable to all project stakeholders.

This richness of data has revolutionized the standard of care in our profession. Surveying practices and deliverables acceptable in the days before widespread use of GNSS, robotics, and scanning have been displaced by higher expectations, whether by statute or competition.

Below-ground however, today's expectations are not much different from times past.

Mapping India: another National GIS effort launched

National GIS promises to transform governance landscape, make life easier India is mapping out its newest national asset, a state-of-the art online information bank, which promises to transform governance, aid planning and make life easier for the man on the street. Called National GIS, this geographical information system powered service would be the first one-stop database of India's natural and physical assets, providing information and services about government schemes and businesses -- right from locating malls, hospitals or ATMs to lodging complaints.

The locational data service, expected to be fully operational in 3 years, would be accorded the status of a national asset and can accessed through desktops or mobiles. National GIS, which is expected to help boost productivity and keep a check on wasteful expenditure, will have a "citizen layer" that will make it possible for individuals to geographically tag complaints and grievances on a real-time basis that will be accessible to users across three levels-?government, businesses and citizens.

National GIS vision document v.1.0 (June 2011) – "Establishment of National GIS" under Indian National GIS Organization (INGO)

Source: Economic Times of India; Rapid Uplift blog and Public Information Infrastructure & Innovations (PDF)

Geo-Immersion Makes Maps Come Alive by Miles O'Brien & Jon Baime

This article, which originally appeared on the National Science Foundation's Science Nation magazine, describes the work of the University of Southern California's Integrated Media Systems Center to develop "Geo-Immersion" applications.

Source: Directions Magazine

Military Surveying - then & now from the American Surveyor

<u>Geospatial standards, data sharing and interoperability</u> by Steven Ramage, Open Geospatial Consortium Geospatial (or location) technology includes everything from geographic information systems (GIS) to location services, to earth observation, the GeoWeb, sensor networks, augmented reality, location-based Web advertising and much more. Source: EE Publishers

Iwakuni's Legacy byGC Skipper (from Geospatial World)

Nearly 340 years ago, an exceptional team of engineers, mathematicians and surveyors in Japan joined forces to produce an architectural marvel--the wooden Kintai Bridge in Iwakuni.



<u>Automatic interpretation of digital maps</u> by Walter Volker & Fen Luo ISPRS Journal of Photogrammetry & Remote Sensing (also available in PDF format) Abstract

In the past, the availability and/or the acquisition of spatial data were often the main problems of the realization of spatial applications. Meanwhile this situation has changed: on one hand, comprehensive spatial datasets already exist and on the other hand, new sensor technologies have the ability to capture fast and with high quality large amounts of spatial data. More and more responsible for the increasing accessibility of spatial data

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are also collaborative mapping techniques which enable users to create maps by themselves and to make them available in the internet. However, the potential of this diversity of spatial data can only hardly be utilized. Especially maps in the internet are represented very often only with graphical elements and no explicit information about the map's scale, extension and content is available. Nevertheless, humans are able to extract this information and to interpret maps. For example, it is possible for a human to distinguish between rural and industrial areas only by looking at the objects' geometries. Furthermore, a human can easily identify and group map objects that belong together. Also the type, scale and extension of a map can be identified under certain conditions only by looking at the objects' geometries. All these examples can be subsumed under the term "map interpretation". In this paper it is discussed how map interpretation can be automated and how automatic map interpretation are discussed and two approaches are shown in detail.

Keywords: Interpretation; Classification; Spatial data mining; Analysis; Recognition Thanks to Ross Johnson for this item

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Books and Journals (including Videos and Web publications)

Thoughts on the Geospatial industry, Open Standards and Open Source Cameron Shorter's blog

SDI Magazine

Development of the Arctic Research Mapping Application (ARMAP): Interoperability challenges and

solutions by G. Walker Johnson, Allison G. Gaylord, Juan C. Franco, Ryan P. Cody, Jerald J. Brady, William Manley, Mike Dover, Diana Garcia-Lavigne, Roberta Score, Craig E. Tweedie

Computers & Geosciences (in press, available online 23 April 2011) -- not an open access journal, subscription required

Keywords: Arctic science; Geospatial cyberinfrastructure; Geographic information system; WebGIS; Spatial data infrastructure; Virtual globes

Abstract: Ensuring interoperability between WebGIS applications is essential for maximizing access to data, data sharing, and data manipulation. Interoperability is maximized through the adoption of best practices, use of open standards, and utilization of spatial data infrastructure (SDI). While many of the interoperability challenges like infrastructure, data exchange, and file formats are common between applications, some regions like the Arctic present specific challenges including the need for presenting data in one or more polar projections. This paper describes the Arctic Research Mapping Application (ARMAP) suite of online interactive maps, web services, and virtual globes (the ARMAP suite; http://armap.org/) and several of the interoperability challenges and solutions encountered in development to date. ARMAP is a unique science and logistic tool supporting United States and international Arctic science by providing users with the ability to access, query, and browse information and data. Access to data services include a text-based search utility, an Internet Map Server client (ArcIMS), a lightweight Flex client, ArcGIS Explorer and Google Earth virtual globes, and Open Geospatial Consortium (OGC) compliant web services, such as Web Map Service (WMS) and Web Feature Service (WFS). Through the ARMAP suite, users can view a variety of Arctic map layers and explore pertinent information about United States Arctic research efforts. The Arctic Research Logistics Support Service (ARLSS) database is the informational underpinning of ARMAP. Avoiding duplication of effort has been a key priority in the development of the ARMAP applications. The ARMAP suite incorporates best practices that facilitate interoperability such as Federal Geographic Data Committee (FGDC) metadata standards, web services for embedding external data and serving framework layers, and open standards such as Open Geospatial Consortium (OGC) compliant web services. Many of the features and capabilities of ARMAP are expected to greatly enhance the development of an Arctic SDI.

Burt's Solar Compass: Its Conception, Development, Manufacturing, Marketing and Daily Use by Robert C. Miller (review by Jack Owens – The American Surveyor)

Experience with navigational trigonometry in high school led Robert Miller to a lifelong interest in the astronomical triangle and the equipment used in defining its values. A broader interest in the history of technology and continuing research led him to the work of 19th century Philadelphia survey instrument maker William J. Young. Many of Young's letters had been preserved in the William A. Burt family records at a research library in Michigan. Burt's invention of the solar compass overcame the problems of local attraction Back to contents



that affected the readings of a magnetic compass in an area rich in mineral deposits. Miller's studies revealed that later accounts of Burt's invention written late in the 19th century did not seem to reflect some of the facts he had been uncovering in his research, or presented apparent fabrications. He therefore began writing a more accurate account of the invention of the instrument that would define the direction for much of the surveys of the Public Land Survey System.

At 135 pages, Burt's Solar Compass is compact but thorough. For anyone who enjoys the linking of original documents with surveying history, I recommend it. A companion CD provides transcribed copies of many of Miller's sources that history buffs will appreciate. The book may be ordered from <u>beau@mspsinstitute.org</u> for \$30.

Burt's Solar Compass: It Conception, Development, Manufacturing, Marketing and Daily Use Author: Robert C. Miller Specs: 135 pages. \$30. Publisher: Lansing, MI: Michigan Society of Professional Surveyors Institute, Spartan Printing, 2010.

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LiDAR News, Vol 1, No 9

Think Quarterly - Google's new on-line magazine

Coordinates monthly magazine

SERVIR-Africa community news

The American Surveyor newsletter (20 July)

GISuser - GIS and Geospatial Technology News

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Just for Fun!



Nepal to ascertain height of world's tallest peak

In an attempt to calculate the exact height of Mount Everest, Nepal launched a two-year geodesic survey to measure the Himalayan peak. Source: GeoSpatial World and The Guardian. See also Asian Surveying & Mapping

The book *Earth Platinum* is a unique cartographic Atlas - and large. The book defies the imagination with images the size of walls.

Earth Platinum is the world's largest atlas, and contains maps, text and photos. The maps are the largest scale of any world atlas on a single page, many of the images are so large they take up a wall of 6 feet x 9 feet. Millennium House has spent over US \$1 million in producing the mapping required for Earth. It will be published in August 2011. It will cost US \$100,000 per copy.

More Information: <u>http://www.millenniumhouse.com.au</u> Source: V1 Magazine



US students lack proficiency in geography

Less than one-third of the US students achieved at or above the proficient level in geography, according to a recent National Assessment of Educational Progress (NAEP) '<u>Report Card</u>'. Source: GeoSpatial World



Training Opportunities

PhD Scholarship Position: Climate change, vector-borne diseases and vulnerability

A PhD position in Climate change, vector-borne diseases and vulnerability (to commence in October 2011 and run for 3 years) is currently available through the Healthy Futures project.

The PhD position is embedded in a sandwich program jointly carried out between the Centre for Geographic Information System & Remote Sensing at the <u>National University of Rwanda (CGIS-NUR)</u> and the Centre for Geoinformatics, <u>University of Salzburg (Austria; Z_GIS)</u>. The candidate will be registered and supervised at NUR. A co-supervisor will be appointed by the University of Salzburg, whereas the candidate will have the opportunity to carry out the research at Z_GIS (travel for 2-3 visits for 3 +- months). The reimbursement and stipend for the research will follow the NUR requirements.

This PhD position is reserved for African-based scientists.

The PhD scholarship will cover maintenance (monthly stipend), university fees, and includes funds to carry out research (including funds for fieldwork, laboratory work and to attend workshops and conferences). The funding will also enable the scholarship-holder to spend periods of time Z_GIS at the University of Salzburg, Austria. **The deadline for application is 15 August 2011.**

Download the PhD Announcement at

< <u>http://www.healthyfutures.eu/images/news_feed/nur-plus-healthyfutures-phd_final.pdf</u> > and NUR Form 5 < <u>http://www.healthyfutures.eu/images/news_feed/form5%20phd%20and%20mphil%20enrolment%202.doc</u> >

For further information, please contact: From National University of Rwanda – CGIS Dr Theophile Niyonzima

From University Salzburg – Z_GIS Dr. Stefan Kienberger

REGISTRATION FOR COURSES IN THE ACADEMIC YEAR 2012-2013 NOW OPEN:

University of Twente - ITC Faculty of Geo-Information and Earth Observation

You can now apply online for courses starting in the academic year 2012-2013. Browse by programme (degree, diploma, and certificate), course domain (disaster management, earth sciences, geoinformatics, governance, land administration, natural resources, urban planning, water resources) or location in the course finder at <u>www.itc.nl/CourseFinder</u>. If you prefer a printed copy of the study brochure 2012-2013, let ITC know by sending us an email: <alumni@itc.nl>.

Short Course: Remote Sensing and GIS for Geological and Mineral Exploration, 2 weeks (Dar es Salaam, Tanzania)

The two-week course Remote Sensing and GIS for Geological and Mineral Exploration provides an introduction into the application of GIS, remote sensing and airborne geophysics to geologic mapping and mineral resources exploration. The course will start on 7 November 2011 at the SEAMIC premises in Dar es Salaam, Tanzania. Registration deadline: **1 November 2011**. The following will be covered: 1) The analysis and interpretation of geological data sets, such as ASTER satellite imagery, aeromagnetics and gamma-ray spectrometry and geochemistry, 2) the integration of different data sets to enhance geologic interpretations, and 3) mineral prospectivity modelling with GIS to generate exploration targets. Concepts and theories are explained in interactive lectures and their application will be practiced in hand-on exercises of East-African and other case studies.

Target group: Geologists who are working in the field of geological mapping and/or mineral resources exploration who want to deepen their knowledge of the use of digital data sets in a GIS environment to increase the efficiency of geologic mapping and exploration campaigns.

For more information and registration: <u>www.itc.nl/Pub/study/Courses/C11-ESA-TM-05.html</u>.

e-Learning for the Open Geospatial Community

We are pleased to inform that the course repository for the ELOGeo (An e-Learning Framework for Using Geospatial Open Data, Open Source and Open Standards) project is ready.

ELOGeo is a JISC-funded project based at the Centre for Geospatial Science, the University of Nottingham in partnership with the Mimas Centre of Excellence at the University of Manchester. ELOGeo main collaborators are Open Source Geospatial Foundation, Open Geospatial Consortium (OGC), Ordnance Survey, Open Nottingham, International Cartographic Association (ICA) and gvSIG Association. More details of ELOGeo.



gvSIG Training platform opens with a first course for gvSIG users

The gvSIG Association tries to increase its learning offer through online courses, publishing a new learning platform: gvSIG Training. In parallel, the gvSIG Association launches its official certification program. It's a step forward in the training processes in free geomatic, creating an online training centre, that contributes to the spreading as well as to the sustainability of the gvSIG project. Training without geographic barriers, and with the best professionals.

In this platform, you will find courses in several languages to learn to use the different applications of the gvSIG project, in a user level as well as in a developer one. The courses list will be extended gradually with different gvSIG and free geomatic specialization courses (databases, map servers...), with the objective of covering the different needs of the Community.

The courses offered by gvSIG Training are part of the training routes that are required to obtain the gvSIG official certification.

For further information:

- gvSIG Training: <<u>http://gvsig-training.com/</u>>

- gvSIG Certifications: < http://www.gvsig.com/services/certification>

GIS Courses by Distance Education NSW Riverina Tafe

The courses listed below are all full Geographic Information Systems courses which can be studied over a number of semesters by distance study pathways.

Certificate III in Spatial Information Services (GIS)

Certificate IV in Spatial Information Services (GIS)

Diploma of Spatial Information Services (GIS)

Source: NSW River

Participatory Spatial Information Management and Communication Training Kit now available on-line

Co-published by CTA and IFAD in English and Spanish, the Training Kit is a unique product that can be tailored to meet user needs, ensuring that employees get the best training available on Participatory Spatial Information Management and Communication.

The online version was launched at the beginning of March 2011. The DVD version was launched in December 2010. The Training Kit contains 15 Modules, each presented through a series of Units. Modules cover the entire spectrum of good developmental practice – from mobilising communities to developing a communication strategy based on the outcome of participatory mapping activities. The Modules touch on topics such as the fundamentals of training, ethics and community groundwork and processes as well as the more technical low-, mid- and high-tech participatory mapping methods.

Users decide what they want to cover and when. The product has been developed using the Multimedia Training Kit (MMTK) approach – which allows you to pick and choose those Modules, Units and components that best suit your particular requirements and develop a curriculum to suit your specific needs. **Publishers:** Technical Centre for Agricultural and Rural Co-operation ACP-EU (CTA), Wageningen, The Netherlands and International Fund for Agricultural Development (IFAD), Rome, Italy Source: <u>The Centre for Agricultural and Rural Cooperation</u>

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Funding Opportunities, Awards, Grants

Europe's earth monitoring competition

The Global Monitoring for Environment and Security (GMES) has opened this year's competition for the best new ideas and services for the best use of Earth observation data from Europe's Global Monitoring for Environment and Security program. Initiated by the European Space Agency (ESA), the Bavarian Ministry of Economy, the German Aerospace Center (DLR) and T-Systems, the competition is open to students, researchers, entrepreneurs, start-up companies and small and medium enterprises to develop new applications for data from the GMES initiative. Proposals can be submitted by September 15, 2011 in five categories: Best Service, Ideas, ESA App, DLR Environmental, and T-Systems Cloud Computing. Prizes are awarded for the winners of each category. And, an overall winner will be awarded the GMES Master which comes with an additional cash prize of 20,000 Euros.

Source: <u>GMES Masters</u> and Thanks to Wonkug Baek for this item



Call for proposals: GSDI Small Grants Program 2011-2012

The Global Spatial Data Infrastructure (GSDI) Association, the FGDC, and GISCorps have announced the Small Grants Program for the year 2011-12.

The Small Grants Program provides awards of \$2500 US in cash and/or contributed volunteer professional services for a technical or institutional projects. A list of typical projects follows - but this list is not exhaustive: Convening of national or sub-national seminars or workshops related to SDI

Producing SDI- and EOS-related training manuals and modules (these materials must not duplicate existing materials)

Establishing metadata and clearinghouse nodes (catalog services)

Establishing standards-based web mapping and data access services

Accomplishing geospatial data and/or SDI surveys or inventories

Producing and disseminating newsletters and awareness-raising materials about SDI

Drafting policy and legislation related to SDI

Priority will be given to projects in developing nations and countries with economies in transition. Grants can be awarded to SDI coordinating bodies (councils, committees) and GIS user groups, but the GSDI Association asks that one institution take responsibility for receiving/depositing the funds. Grants cannot be used to cover organization overhead expenses.

Application deadline: 31 October 2011

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Employment Opportunities

Spatial Data Infrastructure/Technical Leader

· Key new "Champion" role

• Engaging, collaborating, educating, consulting and facilitating

Land Information New Zealand (LINZ)'s purpose is to maintain and build confidence in property rights in land and geographic information as well as encourage land markets to develop and mature. Our work supports activities as diverse as buying a house, navigating the seas and sending emergency services to the right place. LINZ's New Zealand Geospatial Office is continuing its exciting period of development and growth, and there are now several work streams in motion within its industry-wide work programme. This new leadership role requires a strong collaborator with great interpersonal skills. You will be engaging with a range of external stakeholders from central and local government, academia and the private sector, working towards several key deliverables, one of which is a national formal spatial data infrastructure by 2014.

For further information please contact Joanna Schmelz, LINZ's agent on this recruitment, in the first instance on 0064 4 4999 471 or jo@h2r.co.nz.

To apply for this position please visit our Hot Jobs at <u>www.h2r.co.nz</u>, and refer to vacancy number 14691. Applications close 5pm on 11 August and all applications will be acknowledged by email.

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Conference Proceedings

Webcast presentations of Open Source GIS Conference 2011

The webcasts of presentations of Open Source GIS 2011 Conference (OSGIS 2011) including the plenary presentations from OGC-OSGeo Interoperability day are now available.

INSPIRE 2011 Conference Report 27 June – 2 July, Edinburgh, UK



2011 Esri Asia Pacific User Conference Proceedings

ISDE Working Group Meeting on Digital Earth Vision to 2020

In March 2011, the International Society for Digital Earth held a working group meeting in Beijing on a Digital Earth Vision to 2020. The meeting brought together a diverse group of experts in an attempt to imagine how Back to contents



Digital Earth might evolve over the next decade. The Vision to 2020 is an updated reevaluation of the Digital Earth concept presented by Al Gore in 1998. This new vision takes into account the advances in technology made so far in the 21st century, considers changes in society and the ways people interact with technology, and anticipates the drivers that will affect future development.

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Conferences, Events

For upcoming events of global or major international interest, please visit the <u>upcoming conference list</u> on the GSDI website – as this conference list will be reserved for conferences within or with specific interest to the Asia Pacific Region.

The editors welcome news of conferences & events from the newsletter subscribers

Call for Expression of Interest to host AARSE 2014 and future Conferences

Call for Expression of Interest to host the 10th biennial International Conference of the African Association of Remote Sensing of the Environment (AARSE) in October 2014 and future Conferences. The 9th conference will be held in Morocco in October 2012.

Date	Location	Event
August 2011		
3 – 4 August	Kampala, Uganda	1st Conference on Advances in Geomatics Research The Department of Geomatics and Land Management, Makerere University invites you to the 1st Conference on Advances in Geomatics Research to be held from the 3rd – 4th of August 2011 at the CEDAT Conference Hall – Makerere University Kampala, Uganda. The theme of the conference is "Geomatics Research for Sustainable Development". The theme seeks to bring to the fore Geomatics research and practice taking place internationally, regionally and locally in Uganda. The conference essentially seeks to highlight, promote, share and encourage scholarship in the various Geomatics sub-disciplines such as Geographical Information Systems (GIS), Remote Sensing, Engineering Surveying, Global Navigation Satellite Systems (GNSS) Geodesy, Land Management etc. The conference will include preconference workshops, plenary and technical sessions. Contact: Moses Musinguzi - Head Geomatics and Land Management Department – OR – <u>Anthony Gidudu</u> - Organising Committee Chair
5 - 7 August	Washington, DC USA	THIRD INTERNATIONAL CONFERENCE ON SCIENCE IN SOCIETY
8 - 10 August	Taipei	AOGS 2011 Geosciences World Community Exhibition The Geosciences World Community Exhibition will be held in conjunction with the 8th Annual Meeting of the Asia Oceania Geosciences Society (AOGS)
15 - 19 August	Nairobi, Kenya	AGSE 2011
17 - 19 August	Rio de Janeiro, Brazil	Latin American Geospatial Forum
23 – 25 August	Perth, Australia	<u>7th International Symposium on Digital Earth</u> (ISDE7) Held in conjunction with WALIS Forum 2011 and the 2011 NRM Conference. Registration is now OPEN. The Australia Brazil Canada China Consortium will convene a workshop, as will the CRC for Spatial Information. ICAN 5. Constal Atlance on Engineer for Constal and Marine.
31 August –	Oostende,	ICAN 5: COASTAI ATIASES AS ENGINES FOR COASTAI AND MARINE



2 September "NEW"	Belgium	Spatial Planning . This event will take place at the headquarters of the <u>UNESCO International Oceanographic Data and Information</u> <u>Exchange (IODE)</u> . ICAN 5 will focus on coastal web atlases as engines that support and drive the coastal/marine spatial planning (CMSP) process, primarily in northern and southern Europe, the US, the Caribbean, and Africa. Participants will share progress on national and regional-level efforts to improve and build atlases in support of new national and regional CMSP directives.
September 2011		
9 – 11 September	Denver, Colorado	State of the Map (SotM)
12 – 16 September	Denver, Colorado	FOSS4G 2011
15-16 September	Paris,FRANCE	3rd Symposium on Earth Observation Business
18 – 22 September	Amman, Jordan	ISNET / RJGC Workshop on Applications of SatelliteTechnology in Water Resources ManagementThe workshop would comprise presentations by participants, topic- specific lectures by experts and hands-on training which will focus on building capabilities in use of SRS techniques for water exploration. The main focus of the workshop is sharing of knowledge, experiences and update relevant OIC researchers on water resources exploration.Important datesLast date for abstract submission & applications05 July 03 August 18 August
19-22 September	Tossa de Mar, SPAIN	<u>11th International Scientific & Technical Conference</u> From imagery to map: digital photogrammetric technologies.
28 – 30 September	The Delft, Netherlands	UDMS 2011
October 2011	Houndhando	
2 7 October	Tainai TAIMAN	22nd Asian Conference on Remote San#Proving for
3-7 October		Green Asia" (ACRS 2011)
5-7 October	Zanzibar Beach Resort, Tanzania	6th ESRI Eastern Africa User Conference Call for Presentations ESRI Eastern Africa invites you to share and discuss your GIS experiences by submitting a paper abstract for the upcoming conference in any of the following tracks: * Conference Track Sub-themes * Mapping & Charting and Public Safety Defence & Intelligence, Disaster Management, Law Enforcement, National Mapping & Charting * Government Demographics, Economic Development, Election Services, Land Records, Public Works, Urban Planning * Natural Resources Agriculture, Biodiversity Conservation, Environmental Management, Water Resources * Health Services and Education Higher Education, Public Health, Research * Utilities Electric Generation, Transmission & Distribution, Telecommunications, Water & Sewerage * Transportation & Business Aviation, Highways & Roads, Logistics, Maritime Transportation, Railways, Real Estate Abstract Submission The deadline for abstract submission is 30 July 2011, Papers



		brochure for the guidelines of abst	ract submission and submit your
		abstract at <u>http://www.esriea.co.ke</u>	viea.co.ke
		Map Gallery	<u>ICA.CO.KC</u> .
		ESRI Eastern Africa invites you to	submit posters/banners of your
		GIS work done with ArcGIS softwa	are for display in the Map Gallery
		during the conference and for inclu	usion in the keynote
		presentations.	
		All poster presenters will receive a	30% discount on conference
		2011 Contact events @ostica co.	n deadline is the 24 September
		Registration	
		The Conference registration is nov	v open and the Early Bird
		Registration deadline is 12 August	2011. ESRI Eastern Africa
		recommends that you register toda	ay and take advantage of the
		Early Bird Registration. Visit <u>http://</u>	www.esriea.co.ke/index.php/6th-
		esh-ea-user-conference of confac	events@esnea.co.ke
6 – 7 October	Melbourne	Celebrating ten years of	research and achievement
	Australia	Celebrating 10 Years (2001-2011)
		Established in	2001, the CSDILA has been
		1 contributing	to national and international
		knowledge and	d practise in the domain of Land
			celebrate ten years of research
		10 YEARS the CSDILA is	s proud to host a two day event
		CSDILA titled "Beyond	Spatial Enablement" to be held in
		DATA INFRASTRUCTURES & LANO ADMINISTRATION Melbourne, Oc	tober 2011 to discuss the future
		directions of sp	batial enablement.
17 – 10 Octobor	Jakarta	Map Asia is now rebranded as As	a Geospatial Forum
17 – 19 October	ountarita,		decospatian orani.
17 – 19 October	Indonesia	Contact Important Dates	a ocospatian oram.
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		cutting-edge technology, and to promote the development and
24 - 27 October	Seoul, Korea	United Nations Forum on Global Geospatial Information
acth anth	Daria France	Management (GGIM)
25 – 28th	Paris, France	Authorities: Spatial Information and Spatial Planning Tools
November 2011		
7 – 11	Abuja, Nigeria	AfricaGIS 2011: A Geospatial Technology Revolution in Africa
November		 Sub-themes: Spatially-enabled Governance; Enterprise GIS and Land Administration: the building blocks of sustainable development; New Trends: crowd-sourcing, volunteered geographic information (VGI), and web services in the cloud; Business Geographic's: the geospatial advantage Please submit your abstracts to <u>secretariat@eis-africa.org</u> immediately.
14 – 16	Luala Lumpur,	The International Conference on Informatics Engineering &
November	walaysia	University Technology Malaysia, Malaysia
"NEW"		Nov. 14-16, 2011
		All the papers will be reviewed and the accepted papers in the conference will be published in the <i>Communications in Computer and Information Science</i> (CCIS) of Springer Lecture Notes Series (www.springer.com/series/7899), and will be indexed in many global databases including ISI Proceedings and Scopus. In addition, selected papers after complete modification and revision will be published in the special issues journals. Researchers are encouraged to submit their work electronically. Submitted paper should not exceed 15 pages, including illustrations. Papers should be submitted electronically. All papers will be fully refereed by a minimum of two specialized referees. Before final acceptance, all referees comments must be considered. Important Dates
		Submission Date: Aug. 1, 2011Notification of acceptance: Aug. 20, 2011Camera Ready submission: Aug. 30, 2011Registration: Aug. 30, 2011Conference dates: Nov. 14-16, 2011
14 – 16 November	Madrid, Spain	ICERI2011, the International Conference of Education, Research and Innovation Abstract submission: 14th July 2011 Acceptance notification: 1st September 2011 Final Paper submission: 29th September 2011
14 – 18 November	Santiago, Chile	UGI 2001 International Geographic Union "Regional Geographic Conference" Contact Brochure & Call for Papers Contact
15 – 16 November	Seoul, Korea	Esri Korea, Inc. is proud to host the <u>7th Esri Asia Pacific User</u> <u>Conference</u>
15 – 17	Canberra,	Spatial@Gov2011
November	Australia	
21 – 25	Wellington,	Surveying & Spatial Sciences Conference 2011



November	New Zealand	
29 November –	University of	The State of Australian Cities
2 December	Melbourne,	Key Dates
	AUSTRALÍA	Full papers due 06 MAY 2011
		Reviewed papers returned 01.IUI 2011
		Farly registration closes 29 IIII 2011
		Final papers due 31 OCT 2011
December		
December		
2011		
5 - 7 December	Hue City,	The 9th International Conference on Advances in Mobile
	Vietnam	Computing and Multimedia (MoMM2011)
		15 July 2011: Full Papers (8 pages), Short papers, Demos and
		work in progress (5 pages)
		15 September 2011: Acceptance Notification
		15 October 2011: Camera-Ready Papers and Authors Registration
		The submitted papers should not exceed 8 pages and must follow
		the ACM quidelines
11 _ 14	Abu Dhahi UAE	
December	ADU DHADI, UAE	The 6th International Conference for Internet Technology and
December		Secured Transactional Conference for Internet Technology and
		Secured Transactions (ICITST-2011)
		The ICITST is an international refereed conference dedicated to the
		advancement of the theory and practical implementation of secured
		Internet transactions and to fostering discussions on information
		technology evolution. The ICITST aims to provide a highly
		professional and comparative academic research forum that
		promotes collaborative excellence between academia and industry.
		Full Paper Submission Date: June 30, 2011
		Extended Abstract (Work in Progress) Submission: July 31
		Early Registration Deadline (Authors only): Sentember 30, 2011
		Late Registration Deadline (Authors only): Deptember 00, 2011
		Particinants Registration: May 01 to December 01, 2011
		For more detaile
January 2012		
10 – 12 January	University of BC,	Eighth International Conference on Environmental, Cultural,
	Vancouver,	Economic and Social Sustainability.
	Canada	
16 – 18 January	UCLA,	EIGHTH INTERNATIONAL CONFERENCE ON TECHNOLOGY,
	Los Angeles,	KNOWLEDGE AND SOCIETY
	USA	Presenters may choose to submit written papers for publication in
		the fully refereed International Journal of Technology, Knowledge
		and Society. If you are unable to attend the conference in person,
		virtual registrations are also available which allow you to submit a
		paper for refereeing and possible publication in this fully refereed
		academic Journal.
		The deadline for the next round in the call for papers (a title and
		short abstract) is 14 June 2011
April 2012		
11 - 12 April	Lancaster LIK	Call for Papers CISPLIK2012 Langester University 2012
11 - 15 April	Lancaster, UK	Ve are placed to invite you to submit about (4500 year) accurate
(INT 14/2)		we are pleased to invite you to submit short (~1500 word) papers
		ior the 20th annual GIS Research UK conference (GISRUK).
		we welcome papers covering all aspects of theoretical and applied
		GIS research, particularly those within the following themes:
		 Environmental Geoinformatics
		Open-Source GI
		• Web2.0
		Qualitative GIS
		Spatial Ecology



		• Health
		Emergency Response
		Landscape Visualisation
		Geospatial Semantics Location-Based Services
		Remote Sensing and Photogrammetry
		The closing date for submissions is 25th November 2011. All
		papers will be subject to peer review with accepted papers
		allocated to oral and poster sessions accordingly. Conference
		proceedings including all papers accepted for oral and poster presentation will be made available as a free e-book (with ISBN)
		and as hardcopy for purchase via http://www.lulu.com.
		The conference will be proceeded by a Open Source GeoSpatial
		software workshop and a Young Researchers Forum commencing
		on Tuesday 10th April 2012.
		The keynote speakers for the conference will be:
		- Pete Atkinson, University of Southampton, UK
		- Tyler Mitchell, Executive Director, OSGeo, USA
		For more information and submission details please visit the
		conference website: http://www.lancs.ac.uk/gisruk2012 or contact
		members of the local organising committee via
		gisruk2012@lancs.ac.uk . We look forward to receiving your
		submissions and welcoming you to Lancaster in 2012.
May 2012		
13-17 May	Quebec City,	2012 Joint World Conference
	Canada	GSDI 13 and Canadian Geomatics Conference (CCC)
		bosted by CECIDE Network
		hosted by <u>GEOIDE</u> Network GSDI 13 invites presentations/papers covering the full range of
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