

## KEYNOTE ABSTRACTS

### SPATIAL TECHNOLOGIES AND INFORMATION – THE PAST, THE PRESENT AND INTO OUR ONLINE WORLD by Steve Jacoby, Queensland Department of Natural Resources and Water

With only a web browser, you can get started with using GIS through Interactive Mapping Sites, satellite imagery sites and other spatial information sites available through a number of government departments, universities and industries. This presentation will demonstrate how valuable spatial information and spatial technologies are in the real world from the past to the present, with vision into the future. The focus of use of online GIS in the classroom will provide participants with a list of worthwhile sites for easy access to spatial information. A number of classroom exercises that use online GIS as well as simple ways to use online GIS in assessment items will be demonstrated.



### GIS IN THE CLASSROOM by Derek Milton, ESRI Australia, Perth

This presentation addresses the opportunities and challenges for teachers to introduce the increasingly popular geographic information systems (GIS) technology into the classroom as a tool for discovering the world in which we live.

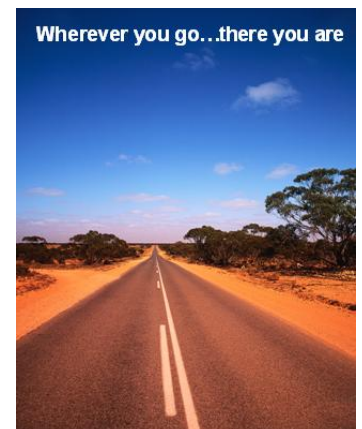
GIS are an exciting emerging technology that has gained considerable interest and application in many industries across the world ranging from marketing of products to the management of electrical utilities. With the advent of such sites as Google Maps, we are seeing people with little or no experience in technology exploring the world in which they live. Technically, the excitement is brought about through the mix of database and graphics that allows for the visualisation of information. For teachers it provides the opportunity of exploring, analysing and understanding the world using an exciting technology. This presentation is aimed at providing teachers with the information that will assist in introducing the geographic technologies into the classroom. It will open by addressing "What is GIS?" There will be some examples of how it is being used in industry before proceeding to look at how it is and might be used in the classroom. The critical issues of resources required and their availability to teachers will be addressed, including options for local geographic data as well as international, national and local support networks. It is hoped that the information provided will position teachers to take up the challenge of introducing a very useful, exciting and rewarding information technology to the classroom.

Attendees will learn:

- ✚ What is meant by a geographic information system (GIS)
- ✚ What sort of projects are carried out in classrooms in both primary and secondary schools
- ✚ Sources of resources available to teachers
- ✚ International, national and local support networks
- ✚ Local (WA) challenges and opportunities

### USING GIS TO EXPLORE A NEW WORLD ... OR OLD? by Bert Veenendaal, Curtin University, Perth

GIS are increasingly attractive to many disciplines and applications within geography, science and information management, among others. GIS are used to manage data and information about geographic location, proximity and spatial relationships. The key among all these is *location*: the position in space on the earth's surface where something exists (or did/will exist). Applications involving location are not new, but have been around for a long time. What is new is that the technology and data to handle location are rapidly developing and making it easier for not only specialists but also the general community to access and manipulate. For example, the ability to perform and optimise





traffic routing and navigation can be achieved by transport specialists, GIS practitioners and the average householder alike using specialist algorithms and GIS databases packaged into car navigation systems. Google Earth and other web-based systems are a further means of bringing geographic data directly into the realm of applications and households. This presentation will explore the need to educate students and the community in becoming “spatially aware”, followed by a discussion on concepts and skills to provide in such an education program. Finally, the opportunities and means of integrating geographic information, GIS and related technologies into the high school curriculum will be addressed.

Attendees will learn:

- ✚ the importance of building spatial awareness
- ✚ how GIS and related technologies can improve the way we manage and use geographic information
- ✚ what aspects of GIS concepts and skills to build in an education program
- ✚ what opportunities are available to integrate GIS into the curriculum

## **RIDING THE SPATIAL WAVE: THE INDUSTRY FOR THE NEXT GENERATION by Spatial Science Institute (SSI) Young Professionals**

The spatial industry is one of the oldest known professions in existence with maps dating back as far as 12,500 BC and yet it is still not at its peak. Google, Microsoft and Yahoo are all starting to branch into the spatial field, and with applications such as TransPerth journey planner and where-is.com we are all users of spatial information. Land planning, environment management, mining, agriculture, engineering and many other industries all rely on accurate spatial information. With so many industries starting to take advantages of location based information, opportunities exist for spatial professionals to become the key players within any organisation.

## **THE USE OF SPATIAL DATA AND TECHNOLOGY OF THE BUREAU OF METEOROLOGY by Kathleen Hirst, Bureau of Meteorology, Melbourne**

The Bureau of Meteorology uses geographic data in much of its day-to-day operations. A visit to the Bureau’s website shows many examples of spatial information: radar feeds, weather station observations, numerical model outputs (atmospheric pressure, sea surface temperature), infrared satellite imagery, tropical cyclones and flood warnings. Until recently, much of these data were in a format that was not easily integrated with GIS. Over the last few years, the Bureau has “spatially enabled” many of its datasets so that the external agencies can access and incorporate this information into their own spatial/geographic systems.

This presentation will discuss the Bureau’s geographic data and how the data are being accessed and used by other organisations, particularly those involved in emergency services.

## **CLIMATE CHANGE by Dr Ray Wills, CEO WA Sustainability Energy Association Inc.**

The Intergovernmental Panel on Climate Change (IPCC) will have been in operation for twenty years this year (2008). The warnings from the IPCC and the science community get more urgent each year not because of hysteria or conspiracy, but because every year for the last two decades we have failed to act on the warnings and the problem only continues to get worse. And the biggest danger from the ongoing work on the science of climate change is not ‘pessimism’ but the reverse - science is inherently conservative. It is more probable that future forecasts of climate impacts will be greater, not smaller, just as has occurred in the last six years. Interim targets set conservatively now are almost a guarantee of doing too little, of creating measures that are simply too small.

All of our infrastructure built in the last century is at risk, built to the specifications of one in 100 year storm events, which in this century will prove to be one in 25 or one in 15 or year events – or less. And within this century, sea levels rise will reshape our coastline.

The challenge of climate change should be the catalyst for changing the way we think about and plan infrastructure, changing the way we use energy and in so doing, future proofing our economy. A key element of managing this change is an integrated, whole-of-government approach to tackle the enormous challenge that global warming poses to Australia and the world.

## **PUTTING GIS IN THE FRONT LINE FOR AUSTRALIAN DEFENCE FORCES by Dean Wright, Thales Australia, Perth**

This presentation outlines the value of GIS integration into Defence Systems, in particular how Army Aviation enhances its capability effectiveness through these systems. We will also take a brief look at the engineering challenges associated with systems that operate in these hostile environments and the solutions Thales has developed to overcome them.

