

Fungi

Newsletter of the
Far North GIS Users' Group Inc



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- As our beloved President usually has the last word the back page has to be the correct position for Words of Wisdom from the Chair. Page 12.
- NARGIS97** is rapidly approaching, the Conference venue is at the Cairns Campus of James Cook University. Commencing at 9.30 Monday 28 th. April and concluding on Wednesday 30 th. April at 4.30 pm.
- It is still not too late to register. Contact Cairns Conferences on Tel 070 313 747 or Fax 070 312 940.

Plucked from the columns of Spatial Business.

Practical Farm Remote Sensing ?

After eight years of research by Dr. Peter Vickery and others at CSIRO in Armidale, the research organisation has entered into an agreement with fertiliser retailer INCITEC and remote sensing consultant Technical and Field Surveys (TFS) to commercialise work on the application of remote sensing to agriculture with a product called SatMap.

Essentially SatMap is a satellite image of a farm, (either Spot or Landsat) processed to provide information about the health of the vegetation cover. Regions of healthy pasture are colour coded dark green, slow growing pastures are light green, and below average stubble is coded brown.

These can then be used as a guide to the application of fertiliser. Clearly, regions growing well require less than regions that are under performing. However, in some cases farmers may get greater returns by changing the ground cover before applying fertiliser.

Vickery's work established the ability of remote sensing imagery to provide detailed information to farmers about the management of their fields. However, Vickery was never able to demonstrate a method by which his techniques could be delivered to farmers at a price they could afford. Farmers are unlikely to purchase a \$5,000 image, even if it is useful.

TFS will then undertake interpretation of the imagery on a paddock by paddock basis.

Radarsat Captures Japan Oil Spill.

On 11 January, Radarsat International in Vancouver received an image that had been acquired by Canada's Radarsat-1 satellite shortly after midnight the same day. The image was sent to the Remote Sensing Technology Centre of Japan (RESTEC). It clearly shows the extent of a disastrous oil spill that occurred in the Sea of Japan on the night of 7 January.

The image was acquired using Radarsat's standard beam position 5 which has a viewing angle of 36° to 42°.

As RSI's distributor of Radarsat data in Japan, RESTEC will be providing the data to local agencies involved in assessing the damage from the spill, and in formulating the clean - up strategies.

The delivery occurred less than five hours after acquisition, according to RSI.

The image is about 0.5 megabyte in size and can be accessed from RSI's FTP site by using the following instructions.

1. Open the RSI ftp-site at
ftp.rsi.ca
2. Enter the word anonymous at the user prompt.
3. Enter your email address at the password prompt.
4. At the next prompt, type bin fir binary mode.
5. Type: cd pub_ftp
6. Type: cd gordon
7. Type: get image2.tif

GPS Communicator.

Magellan Systems has released a device called the GSC-1000, which it calls a GPS Communicator. It features a GPS module, plus a satellite-linked email capacity, which allows the device to access the normal Internet email system.

The unit weighs just over a kilo and is similar in dimensions to the Trimble TDCI datalogger that so many of us know.

The GSC-1000 communicates on VHF via Orbcomm's 28 satellite constellation. This is one of a new generation of low earth orbiting satellite constellations. It is possible to send a message with a fraction of the power needed to communicate with geostationary satellites.

Orbcom satellites are about 400-500 km. above the ground. Geostationary satellites are at 35,600 km.

The unit features six graphic navigation displays, customisable navigation screens, a real-time track plotter, 200 user-defined waypoints. It is d-GPS capable, claiming the usual sub metre accuracy.

NARGIS 97.

The Organisers of the Seminar have advised that available places are filling well, so this is a reminder to all User

Group members to get your registrations in the mail, this is the biggest GIS happening in North Queensland.

Happenings in the House.

Arnon Accad has left Wet tropics in Cairns and has taken up a position in Brisbane at the Queensland Herbarium. **Terry Webb** has been seconded from Do no Research, Mareeba for 4 months. Arnon must have missed the news that **Sharon Bruce** has left DPI Recreation Management, gotten married and gone to Africa.

Robert Crossley is holding private Industry up well with several items in his do now basket, they include, Townsville Industrial Land Project, Trinity Environmental Data Management and his ongoing refining and debugging of his Sugar Mapping package which is placed at 7 Mills.

Susie Kempson from DNR, Mareeba has departed for cooler climes and will be working on her Masters.

Our beloved leader, **Peter Swain** has been nominated for a position on the Regional Consultative Group involving the Wet Tropical Coastal Plan, this is within the Dept. Heritage.

Jeff Mustard has joined the Cairns office of Natural Resource Assessments holding the position of GIS Systems Technical Officer.

Alan Stafford has been appointed to the Systems Analysis and Modelling Program Consultative Group within the CRC for Sustainable Sugar Production.

Utz Wellbrock has programmed the Web site and there is now a permanent connection. He wears two hats now being the head Honcho, Computer management.

Bob Peever has been reincarnated, he has come the full circle back to Mareeba Shire and is now the Asset Officer.

Within the "old" Lands Dept. The recent night of the long knives saw **Les Searle** retain his position as Regional Operations Manager, Tilling & Information Program.

Phil Grue and offsider **Raymond DeLai**, of the Herbert Resource Information Centre, have

attracted considerable interest. **Alan Stafford** went down in early February and came away a convert and has started on initial groundwork, **Peter Swain** and **Utz Wellbrock** are slated to visit as soon as the roads are passable and no Cyclone threatens.

If you have any gossip or just want to have your name in print, Email the Editor with your hot goss. taimalan@internetnorth.com.au

THE PLAN.

In the beginning was the Plan.
And then came the Assumptions.
Ant the assumptions were without form.
And the plan was without substance.
And darkness was upon the face of the Workers.
And they spoke among themselves, saying
"It is a crock of shit and it stinks."
And the Workers went unto their Supervisors and said,
"It is a pail of dung and we cannot live with the smell."
And the Supervisors went unto their Managers, saying,
"It is a container of excrement and it is very strong, such that none may abide by it."
And the Managers went unto their Directors, saying,
"It is a vessel of fertiliser and none may abide its strength."
And the Directors spoke among themselves, saying one to another,
"It contains that which aids plant growth and it is very strong."
And the Directors went to the Vice Presidents, saying unto them,
"It promotes growth and it is very powerful."
And the Vice Presidents went to the President, saying unto him,
"This new plan will actively promote the growth and vigor of the company with very powerful effects."
And the President looked upon the Plan and saw that it was good.
And the Plan became policy.

And this is how shit happens.

submitted by Brookie, out of the Net.

ERSIS International

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Email: teresaw@ersis.com.au

Brisbane based ERSIS in association with MapInfo are gearing up for a big 1997 with the release of three new end-user GIS solutions.

The big three (MapInfo MapX, MapInfo SpatialWare and MapInfo ProServer) provide total end-user GIS functionality. So what are they all about?

MAPINFO MAPX

What it is:

MapX is a way of distributing customised MapInfo functionality at a greatly reduced cost. MapX is an OCX component which allows you to embed mapping into a variety of other business applications. MapX can be embedded into your applications using standard visual programming tools (VisualBasic, Visual C++, Delphi, PowerBuilder).

What it can do:

MapX improves the analytical quality of your business applications.

MapX offers true OLE (Object Linking and Embedding) control, allowing you to integrate a mapping object into new and pre-existing business applications.

ERSIS can assist you in developing map based front-ends to your applications. The group pricing structure represents significant cost savings over other OLE technologies. With MapX, there is no need to purchase or learn any proprietary programming language. Extensive data is included with MapX at no extra cost.

Sample uses of MapX:

You can choose the MapX functions that are most suitable for your needs, for example:

- * thematic mapping i.e. shading a region by sales level
- * visual spatial selections i.e. select and work within a polygon
- * boundary matching i.e. place customers on a map by postcode (enhanced street level matching is available using MapMarker, MapInfo's geocoding tool)
- * layer control i.e. work with raster image layers, postcode layers, census district layers

MAPINFO SPATIALWARE

What it is:

SpatialWare allows you to store, access, manage and manipulate spatial data in the same Oracle database as other business data. You can work with maps the same way you work with non-mapping data. Both types of data are easily accessed and used. You can visualise and analyse data regardless of what database management system is in use. SpatialWare is integrated with MapInfo Professional (4.0.2 and above) as the desktop client system via ODBC connectivity.

With SpatialWare, you can treat your map data like other business data in terms of integrity, multi-user access, backup / recovery, security and other features of the Oracle database environment.

What it can do:

SpatialWare provides an easily implemented spatial addition to the database environment that increases your Oracle capabilities. It gives you true spatial operation in SQL-based standards that are more flexible and less complex than programmatic interfaces or proprietary GIS.

It provides an environment for easy building of custom applications for end users, while allowing extensive database support and lower cost of integration of spatial and other business data.

Who can use it:

If you have a series of organisational systems which have data stored in a RDBMS such as Oracle, then you should consider this solution.

MAPINFO PROSERVER

What it is:

MapInfo ProServer is a server-based intranet mapping solution which allows cost effective access to data through intranet or internet applications. With ProServer and a few copies of MapInfo 4.1, you can easily share spatial data throughout your organisation (intranet) or indeed throughout the world (internet).

The ProServer suite includes:

- * one or more copies of MapInfo 4.1 (depending on the size of your organisation and your specific needs)
- * MapBasic software - the MapInfo custom development language
- * MapInfo ProServer software
- * Optional MapMarker geocoding software
- * administrative software to allow easy set up of the application

What it can do:

ProServer gives end-users a simple, browser-style interface - making maps requires just a few clicks of the mouse. Because MapInfo 4.11 can be accessed through other business applications (with a custom interface), end-users can utilise the mapping component without full scale training in MapInfo.

ProServer is easily customised by info tech staff if required using MapBasic.

Sample uses of ProServer:

ProServer is a complete mapping solution with broad application potential. For example, an organisation can give a wide range of users enquiry facilities in MapInfo.

Call ERSIS FNQ reseller, Robert Crossley of Robert Crossley & Associates (phone 070 314 877) for further information about MapX, SpatialWare and ProServer.

GIS POWERPAK RELEASED

ERSIS have released a GIS PowerPak, which combines five advanced ERSIS software modules that integrate with MapInfo. It gives you the power to edit, analyse, visualise, print and translate data. GIS PowerPak incorporates the following ERSIS software:

- * 3D Mapps v4.1 - adds 3D functionality to MapInfo. 3D Mapps features raster overlay in 3D views, contour polygons for enhanced shading and analysis capability, radial visibility and improved interface for model generation
- * GIS Toolbox - a map building and data analysis enhancement
- * SpeedMap - a high quality mapping tool
- * AIMI - an ARC/Info - MapInfo translator
- * GeMI - a Genamap - MapInfo translator) into an easy-to-use interface

The component products of GIS PowerPak have been seamlessly integrated, and customised toolbars created for ease of use.

Purchasing GIS PowerPak represents a significant cost saving over buying the component products separately.

Waterways GIS Ensures Olympic Planning is Smooth Sailing

With the Olympics only four years away Sydney is gearing up for an unprecedented logistical challenge and one of the areas which will be under increased pressure will be the spectacular waterways of Sydney Harbour and the Parramatta River.

The NSW Waterways Authority is taking advantage of Geographic Information Systems (GIS) technology to manage many different aspects of waterway activities. With the strategic planning well under way for the Sydney 2000 Games, the established GIS is proving to be an invaluable resource in providing integrated information for the Olympic planning process.

The Authority was established as a self funding agency in July 1995. It is the navigation Authority for the State of NSW, managing all navigation issues within the waterways of the State. In addition, the agency acts for the Maritime

Ministerial Holding Corporation (MMHC) as landowner for the wetlands of Sydney Harbour, Botany Bay, Port Kembla and the Port of Newcastle.

Wetland Management

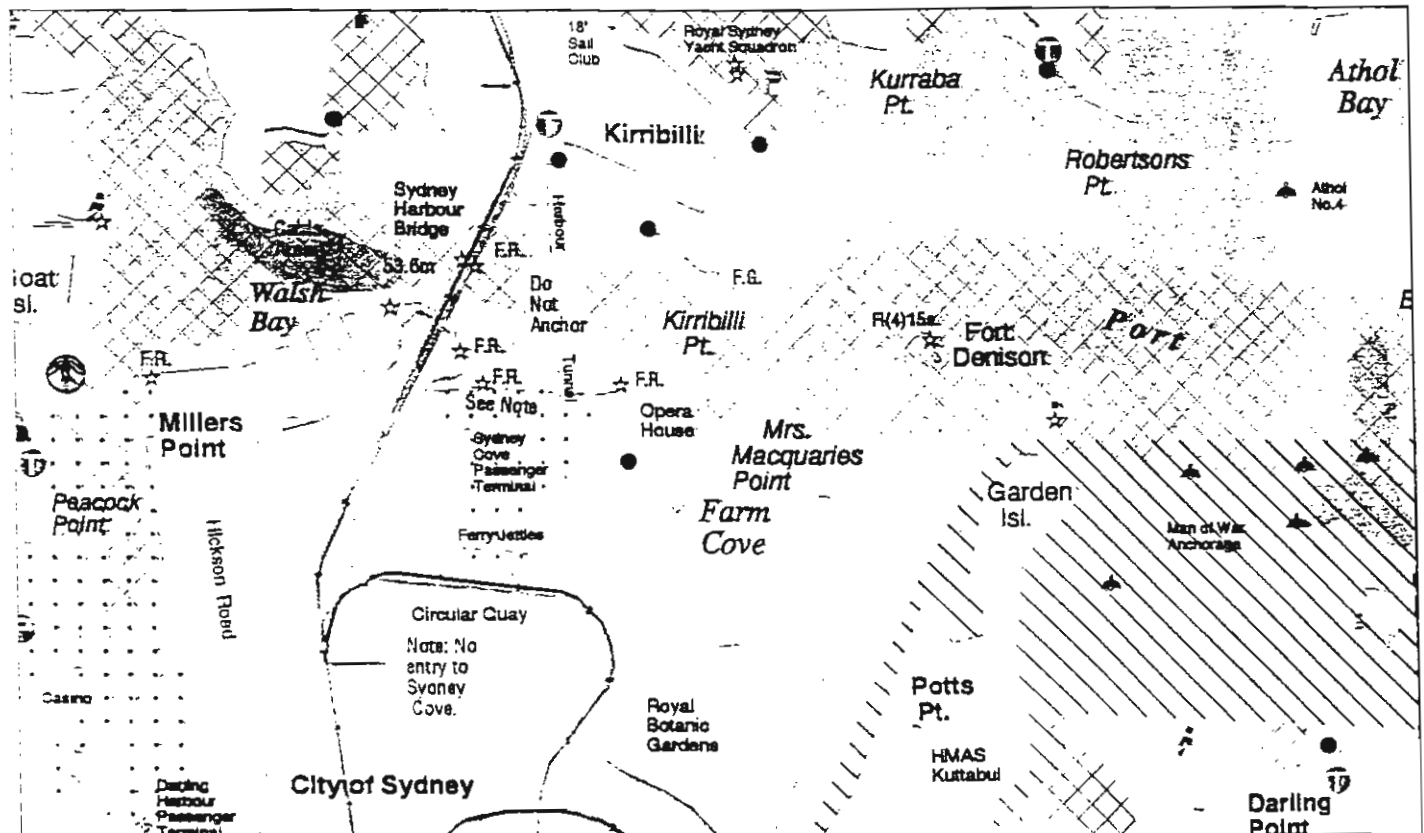
As the agent for the landowner of the bed of Sydney Harbour and its tributaries, the Authority establishes lease agreements, which comply with regulatory requirements, for any development over the Harbour bed. Approximately 18 months of dedicated data capture, system design and implementation has resulted in a comprehensive survey-accurate spatial database which identifies all structures and proposed developments which are located over this wetland. The current property management system contains details of some 2000 leases as well as identifying areas owned by government agencies.

A new property management system will be developed soon (under a current tender) which will link the textual information to the spatial database. The result will be a system which can be updated as new applications are received, and which will locate the structure over the Harbour, which is linked to the lease details.

Mooring Management and Aquatic Licenses

The Authority has some 18,000 mooring licenses throughout the State and the records for these licenses are stored in a textual database. Over the last three years

(Below) The safe boating map series, which all look similar to this excerpt from map 9 - Sydney Harbour, are a comprehensive guide to land marks, facilities and restricted areas on the waterways.



the location of these moorings has been captured into the GIS database for all the major mooring areas of the State. This data can now be integrated with not only the property management database but also additional data sets such as seagrass beds, bathymetry, naval waters and fish hauling grounds. By utilising the GIS, new moorings are now optimally located taking into account the impact upon other waterway activities and natural resources.

Aquatic licenses are issued by the Authority to groups who have the right to utilise certain areas of the state's navigable waterways for specific activities such as water-skiing events and sailing competitions. Details of these licenses are retained on the Authority's customer database with access provided via a communications network that links the 27 regional offices to the head office at Rozelle Bay. It is proposed that the GIS will, in the future, be used with the aquatic license database to provide a visual display of the impact of any aquatic event. With a GIS interface the aerial extent and timeframe of all events can be queried on a map display, thus enabling clashes to be identified more accurately and efficiently. The license applications would be evaluated taking into account all mapped features using overlay analysis.

Safe Boating Map Series

One of the most visible products from the GIS within the Waterways Authority is the series of safe boating maps. A comprehensive range of maps have been produced for both the Harbour and all other major waterways and coastal areas of the State. Produced for the purpose of informing owners and users of all types and sizes of watercraft, they show areas set aside for activities such as skiing, passive recreation, speed limitation, navigation marks and buoys, and the location of shore based facilities. The mapping functions of ARC/INFO have enabled these maps to be produced entirely in-house and therefore regular updating occurs without major re-drafting. The first maps were produced approximately 12 months after the GIS was installed and the series now comprises 40 A3 maps covering waterways and Harbour areas and a further 14 coastal maps, showing features at a 1:30 000

Increasing the Scope for GIS

The application of GIS has extended to many of the business activities of the Authority such as:

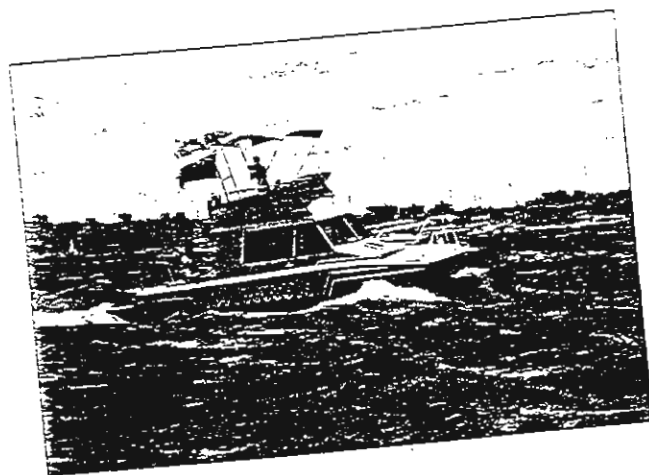
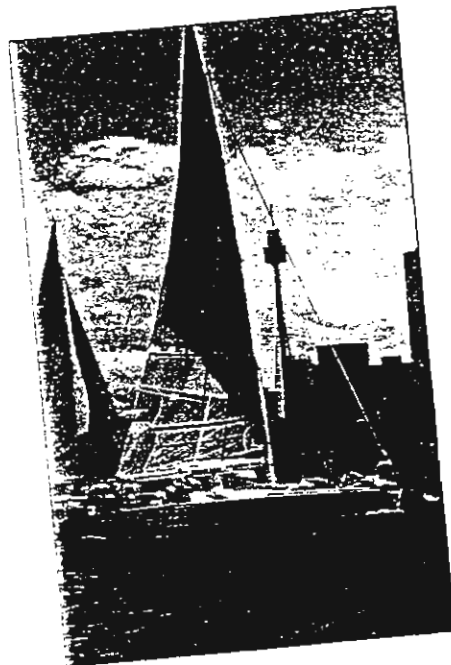
- * Strategic planning of location and distribution of offices;
- * Demographic analysis of the customer base;
- * Determining volumes of rubbish collected in Sydney Harbour by the Harbour cleaning group;
- * Day to day mooring management; and
- * Maintenance programme for navigation aids.

With GPS now planned to be installed on-board Harbour cleaning vessels in the next year, a record of rubbish collection activity with a precise spatial reference will be possible, thus improving on current (textual database) monitoring methods. Detailed mapping and modelling of rubbish collection with respect to the drainage network is one type of analysis that will be possible and will provide a more efficient deployment of the Harbour cleaning vessels. The development of a terrain model of the Harbour bed is also planned, which could be used for protecting the sensitive areas such as sea grass beds.

Planning for the Olympics

Having a well established GIS system for the management of information in Sydney Harbour means the Authority is in an ideal position to provide an essential service for the effective planning of possible activities associated with the 2000 Olympics. Capabilities such as the co-ordination of Aquatic events, modelling the impact of increased numbers of vessels in the harbour, analysing demand on the mooring and berthing facilities and the utilisation of the ferry and shipping lanes provides the basis for further strategic planning of the Harbour environment. Recently the GIS of the Authority was utilised to identify the impact of the proposed Olympic Yachting

(Below) A whole host of activities, such as sailing events on Sydney Harbour, are managed by issuing aquatic licenses. In the future, using the GIS database at the Authority, applications will be processed using overlay analysis of license areas.



(Above) The Waterways Authority has a fleet of craft such as this for supporting the management of the Sydney Harbour and other State Waterways

activities in the Harbour and in November 1996 the A/g Chief Executive of the Authority will deliver a presentation to the International Sailing Federation in Great Britain. For more information contact Rob Collins, NSW Waterways Authority, Ph. 02 9563 8830

Coastwatch GIS Helps Secure Australia's Coast.

About a year ago Coastwatch, a branch of Australian Customs Service, implemented a Geographic Information System to assist in the huge task of surveillance of close to 60 million square miles of Australia's vast coastal area. Since then Coastwatch have taken advantage of the value and potential of this technology for the enormous task of planning and reporting on surveillance activities in the Australian Exclusive Economic Zone.

The highly customised PC - based system, known as Coastwatch GIS (COG) is based on ArcView software from ESRI Australia and was developed with AVENUE (ArcView's programming language) and DELPHI (by Borland International). Implemented as a three year pilot programme in the Coastwatch Canberra Operations Centre. COG has improved Coastwatch's reporting capability, flight performance monitoring and flight route planning.

COG manages surveillance sighting data, the position of surveillance vessels, flight routes and surveillance aircraft movements. Other Geographic features include Great Barrier Marine Park features, airspace restrictions and territorial boundaries.

As of July 1996, Coastwatch coordinates thirteen aircraft covering the total ACEEZ, but focused in the areas of highest risk - remote northern coastal areas between Broome and Cairns. Pilots and observers record incidents (sightings) of all types ranging from Indonesian fishing boats, international fishing vessels, refugee boats, suspicious incidents, footprints in remote areas and other telltale signs of activity. Coastwatch's role is to report on these activities to various client organisations such as the Australian Fisheries Management Authority (AFMA), the Great Barrier Reef Marine Park Authority, Australian Customs Service and Australian Quarantine and Inspection Service (AQIS).

The total number of sightings and events per year is now around 80,000, and after a year of operation the GIS now contains data for in excess of 105,000 events and 2,500 post flight reports. Due to the improved surveillance capabilities the numbers of sightings have increased by about 15%, and Coastwatch have

been able to monitor how effectively the surveillance areas have been covered. This is achieved by analysing previous 'sweep' areas - areas covered by a series of flights depending on Radar ranges and visibility during respective flights.

The most significant improvements in day to day Coastwatch operations are in reporting to clients, and developing summary analyses according to Anton Strech, Chief Inspector Surveillance Operations at Coastwatch. " In terms of producing comprehensive periodic summaries to clients on specific sighting types and frequencies, Coastwatch have moved from a manual system, to creating customised maps of specific sighting types that match specific client requirements " he explained.

Until COG was implemented, monthly reports consisted of textual lists of incidents with locations, mostly described in terms of bearing from land features. Now monthly incident maps are produced showing the distribution of specific incident types for each client request. Mr. Stretch emphasised the value of GIS saying "some of the analyses queries that are performed on the database were simply not possible prior to the GIS database of Post Flight Records (PFR's). In particular the AFMA, a very significant client of Coastwatch, can now have breakdowns of weekly and monthly activities showing all incidents, classified according to certain criteria, on a detailed map".

Planning and delivery of flight briefings are now being approached differently too. Flight weight points are optimised and compared to client requirements before being committed as specific flight routes. Surveillance Coordinators at the Canberra Centre conduct daily briefings using the GIS projected onto a large screen, and can view the position and type of all the current surveillance activities.

The COG is a pilot project that was designed for a three year trial, at the end of which the requirements will be revised and the COG system will be revised accordingly. Even at this stage, according to Anton Strech "the effectiveness and value of using the technology has highlighted the great value of GIS to Coastwatch and a need to develop it and fully integrate it with regional bases to get even greater value from the system".

He continued "the COG application has successfully pushed the operating system (Microsoft Windows 3.11) and ArcView Version

2.1a to the limits ". The developer of COG at ESRI Australia, Tom Giles, reiterated this, describing the project as " the most sophisticated application of the software to date in Australia ". The total solution, which was one of many proposed, including software, geographic datasets, customisation of the system, hardware, and specialist services was delivered within three months of the tender award.

Whilst the system is currently a stand-alone GIS at the Operations Centre, in the long run a distributed system at each regional base (Darwin, Cairns, Broome and Thursday Island) is planned.

For more information contact; Anton Stretch at Coastwatch, or Jacqui Broun at ESRI Australia.

This article generously contributed by ESRI Australia and ESRI's GIS Success Stories.

SNIPPETS from the GOOD OILERS.

Map Sheets.

ERDAS, the US based company that produces the Imagine image processing system, has released a new product called MapSheets.

MapSheets is a map presentation package. It allows users to import satellite imagery - or GIS coverages in either Imaginer, ArcInfo or ArcView formats - directly into other applications, such as spreadsheets, word processors or presentation packages.

Users can also use MapSheets with Microsoft's Excel spreadsheets to create bargraphs, scatter plots and 3-D pie charts using map data.

The package comes with a library of map symbols, and other tools for enhancing GIS or image products.

MapObjects Internet Map Server.

ESRI has released an extension for its MapObjects technology - the Internet Map Server. MapObjects is a technology that allows users to embed mapping functionality in an existing application. With the new tool, this functionality can include serving maps over the internet.

MapObjects Internet Map Server can access server resident files. ArcInfo coverages, SDE layers, and many other types of graphic image.

In addition, the Map server will also work with Netscape Server, Microsoft Internet Information Server, and other Server products that support NASPI/ISAPI extensions.

VB4 Development Environment.

Geosoft in Leeds in the UK has released MapServer 3/32 ocx, a mapping toolkit for developers that are building spatially-based applications in Visual Basic 4.0. VB4 is designed for 32 bit Windows interfaces - Win95 and Win NT.

New features in this version of MapServer include full spatial data management for vector and raster map tiles. It lets one import multiple colour maps from a range of map data formats, pan, zoom and manipulate digital map data and their attributes programmatically.

MapServer provides the VB user with indexing of spatial and attribute data, increased flexibility in sharing map data across the network, and comprehensive error handling.

Developers can distribute map applications using MapServer 3/32 without the payment of licence fees.

The product costs 795 Pommie pounds. and Chris Inie, the business development manager at GeoSoft c.d.inie@geosoft.co.uk will gladly fix you up. The GeoSoft URL is <http://www.geosoft.co.uk>

GPS goes Ballooning.

The Bureau of Meteorology has decided to equip its balloons with GPS location devices, and to close down the East Gippsland-based Omega navigation station it was using to track the balloons as they moved on upper atmosphere winds.

Omega was the world's first electronic navigation system. It relied on a world-wide network of 8 very low frequency transmitters. The system could position a receiver to within about three kilometres.

Omega was established by the US Navy. It was designed to provide en-route navigation for military ships and aircraft. With the advent of satellite positioning systems, first Transit, and then GPS, the system has become obsolete.

The Bureau was the last major user of the Australian Omega station, which was originally installed in 1978 on the insistence of the US Military. The decision to build the Base was highly controversial at the time. Many believed that, since it provided the only method by which nuclear-powered submarines could navigate while submerged in the Southern-Pacific, it made part of Australian territory a natural first strike nuclear target for the Soviet Union.

The US paid \$14 million for the construction of the base. Its running costs, over about \$1 million per annum were met by various Australian federal departments of Transportation until three years ago when the Bureau took over. The six staff are being relocated or taking redundancy.

Farm GIS.

Mike Aubrey's Technical and Field Surveys in Bathurst NSW has recently begun marketing a farm planning tool called Pin.point. The package won an award at the Royal Agricultural Show in 1995 for the best farm software.

It is a GIS, with linked databases in which data layers can be either imported or created.

These can contain paddocks, boundaries, fences, vegetation, soils, land capability and other spatial information.

It can also use a raster as a base layer. Thus it is possible to start the creation of layers by using an aerial photograph to plot the position of the various artefacts on the farm.

Records can be created of all activities that occur inside any particular paddock.

MapInfo Streamlines Breast Screening.

BreastScreen NSW-North Coast has used spatial analysis to analyse information about its customers. As a result, the need for a third mobile mammography unit has become apparent. The services use the units to screen about 12,000 women a year for cancer, from the Queensland border to Port Macquarie.

BreastScreen's Ms Deborah Fulton says that her MapInfo program enables her to use census data and other criteria to produce colour coded thematic maps. Recently, these have clearly indicated localities where a new unit would be most valuable. The software has also produced large wall maps which simplify planning for the location of mobile units.

StreetInfo '97.

ERSIS is now shipping the March 1997 release of StreetInfo for Queensland. The March release heralds the public release of unique feature identifiers (UFI), previously only used internally, for the Queensland Emergency Services' Computer aided dispatch system.

UFI allows many of the State databases to be linked to the state digital road network, enabling more precise geocoding and object location.

David Ower, ERSIS Data Manager will tell you more. Ph. 07 3844 7744
EMAIL davido@ersis.com.au

Mapping yields in the sugar industry

Many growers have a good knowledge of the variations in yield on a farm because they are in the field during the harvest of their blocks.

They see what the ratoons are doing in the following season because they cultivate their own blocks and will take appropriate measures to improve productivity in low yielding areas. However, with an increase in farm and block size, farmers are less likely to get such a good idea about their yield and the variations, apart from a print-out of the total yield from the mill at the end of the day.

Current technological developments will assist growers to see how variable the yield is and where the variations occur. Graeme Cox and Associate Professor Harry Harris from the National Centre for Engineering in Agriculture (NCEA) in Toowoomba have developed a method in which a hydraulic pressure sensor is used to obtain the mass flow rate through the harvester.

Using a Global Positioning System (GPS) a yield map of the harvested block can be generated to indicate the high and low yielding areas within a block. This method was successfully applied on the Davco farm in the Burdekin during the last crushing season.

Derk Bakker, Technical Field Department, CSR Ltd, in collaboration with the NCEA staff developed an alternative to the hydraulic pressure sensor to measure the flow rate through the harvester. It consists of a weigh pad inserted in the top end of the elevator floor.

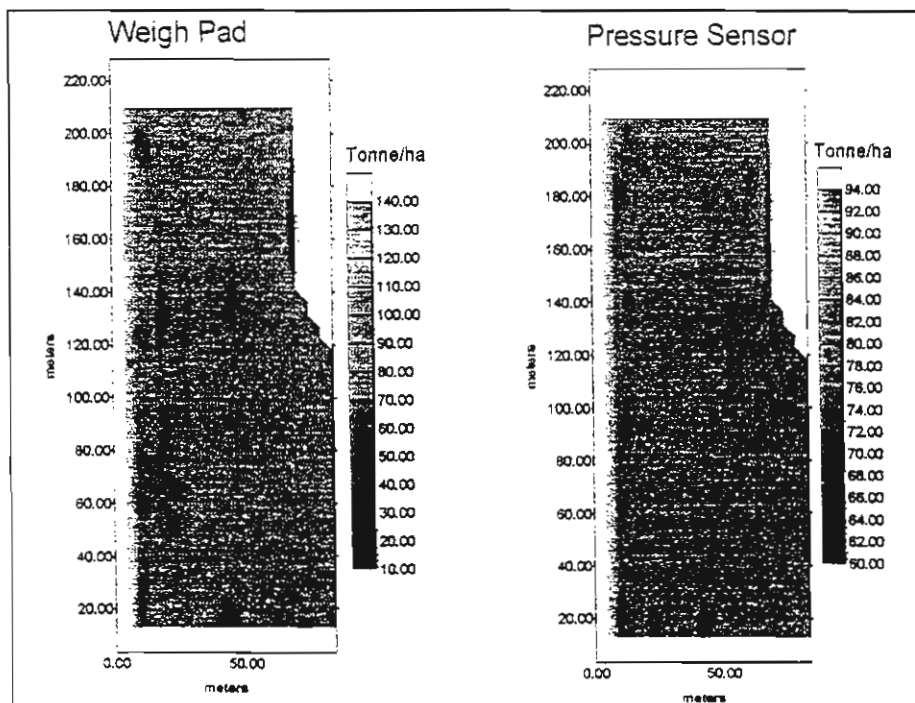
The pad is supported on one side by two hinges and on the other by a load cell. The load cell is connected to a small on-board computer which collects the weight about 100 times a second but stores the total weight as well as the ground speed every second on the computer.



Macknade cane grower, Steve Adams, and Miriam Bakker with a harvester equipped with a weigh pad and a hydraulic pressure sensor. Mr Adams helped test the system.

Most of the testing of this system was done with Alan Green of the Burdekin Agricultural College in Clare.

The general trend of the two systems is similar with the higher yielding region on the right side of the paddock. The pressure sensor gave a smaller range in the yield than the pressure sensor.



Yield maps obtained using the weigh pad (left) and the pressure sensor (right). The average yield was 86 t/ha. The position of the harvester was determined by automatically recording the ground speed and manually recording the time the various rows were harvested.

The surface of the harvested block was dominated by water furrows where the yield was lower. This created the linear patterns of higher and lower yielding areas next to each other. This can be seen on the maps, particularly the second. In certain areas cane had been eliminated altogether as the result of weed control.

As this example demonstrates, having access to a yield map would allow the grower to make more informed decisions based on actual yield variations. Measures to improve productivity can be taken in only those areas that need it and therefore reduces input costs, whether it is the application of gypsum/lime, fertiliser or improve the irrigation or drainage.

Work will continue this season to compare the weigh pad and the hydraulic pressure systems combined with GPS technology.

Editorial supplied by Derk Bakker, Technical Field Department, CSR Ltd.

WORDS OF WISDOM FROM THE CHAIR

Two Committee meetings since the last Newsletter ,February in Mossman (Mr. Stafford a wonderful Host, Water & dry bread) ,March at Woree School(substituting for CSIRO Atherton)Definite improvement in catering (Lasagne & Salad/ Chocolate Cake).Both Meetings well attended with good input from all areas Main focus was NAGIS and the Education Workshop.

A successful workshop at Woree High School (introducing GIS to the Education Fraternity), My thanks to all Committee members of FUNGIS who attended and provided their expertise A Special thanks to Terry Webb who provided the introduction and the Arcview hands on..Interest certainly has been generated .

Now all we got to do is keep stirring the pot , and maintaining the interest level because the response from all quarters was full ahead.

Do I dare compare NAGIS to Cyclone Justin ,Initially bloody huge ,attracting plenty of interest because of is size and location ,then seem to petiter out , to far away , now all of a sudden ,sh*/# its here and I've done nothing ,Where's all our Registrations, whose coming to the Dinner .Never Fear, Les is in complete control all he needs are the Numbers.

A great deal of interest has been generated by the success of the Herbert Resource Information Centre.

Following the first unsuccessful attempt to have a working party from this area ,be given the tour by Phil and his teams (Local Flooding) the second attempt has been launched and again subject to weather, the onsite visit will occur in early April .The possibility of something similar being established in this region has been aired with FUNGIS and further preliminary discussions with all interested parties ,I believe ,will occur, in the not to distant future.

Next FUNGIS Meeting in April ,Final preparation for NAGIS.

PS.

Note to Editor

RE -Last Newsletter

Impression of new Council Uniforms being modelled by yours truly had a slight flaw
You forgot the Beard.