

# DIMENSIONS

## TERRAMODEL 9.7

Now in Australia, Terramodel 9.7 boasts a number of new and improved features to boost its already powerful functionality.

### New features

#### Download / import and export / upload wizards

New download/import and upload/export features have been included for a number of instruments and file formats. DXF/DWG conversion now includes up to AutoCAD 2000. Simplified Data Collector Interface.

#### New Raw Data Editor (RDE)

The advanced functionality of the RDE enables users to incorporate new survey techniques, saving time and improving accuracy. Using the data from one or more survey jobs, the RDE automatically detects stations; finds traverses, intersections and re-sections; computes co-ordinates; and performs co-ordinate adjustments including least squares network.

#### 3-D View now a part of CAD

Previously sold as an independent module, 3-D View is now included with the CAD module.

Operators can create a perspective view of any layer with elevations. Complex terrain models can be displayed and viewed from any angle giving accurate and realistic representation of the site. Users can export a coloured image and place it in Terramodel or other software.

#### New road features

This feature gives greater flexibility with the addition of an Island manager/editor and a new stripping surface feature. Cross-section digitising has been simplified and a multiple horizontal alignment transition has been added to the Finish and Subgrade editors.

#### A multi-layer DTM feature

In Terramodel 9.7, you can use multiple layers to form a DTM. This gives you additional control over the points and lines of a DTM.

#### Automatic rounding

Automatic rounding can now be configured in the prototype to suit your local authorities requirements.

### New TMLs

These are just some of the new TMLs that advance Terramodel's capabilities:

- Adjust a lot to a nominated area
- Re-centre views at a chainage
- Wider range of file conversions
- Intersection design
- Radial set-out report
- Swap points in X, Y or Z
- Roadworks estimating
- Draw latitude/longitude grid
- Reverse direction
- Trimble import/export
- Adjust text aspect ratio.



*Golf course produced  
in Terramodel*

# INDUSTRY NEWS



## AT FIRST SITE

### Training

Our Geocomp10 and Terramodel training sessions continue to be popular. Recent participants include the Accident Investigation Branch of the Victoria Police Training attending a Terramodel course.

Jerry Cresp is currently in Bhutan extending the Geocomp skills of the local surveyors and engineers.

Dates for Terramodel and Geocomp 10 training have now been set for 2001. Training sessions are held monthly for both programs at Geocomp Systems headquarters in Blackburn, Melbourne.

See [www.geocomp.com.au/training/](http://www.geocomp.com.au/training/) for firm dates or contact Jerry Cresp for custom training sessions.

### Pick a Cap

The winner of the August 2000 Pick-A-Cap Competition is John McGrath from Gold Coast City Council, QLD.

schedule is to move 850,000 cubic metres of earth by January 2001.

The SiteVision system installed into a bulldozer comprises an onboard computer, a GPS and VHF radio receiver, an LCD screen displaying the job design, and a set of indicator lights above the dashboard to guide the operator. Terramodel handles the data management and volume calculations for the system.

Two GPS antennas sit on posts at each end of the blade to transmit information on its tilt as well as depth and direction.

As the job's design is carried on the inboard machines, the need for stakes is eliminated. This particular site involves complex gradients that would have required a considerable amount of staking. Surveyor Andrew Cahill's time on-site has been reduced from six hours each day to less than an hour, meaning he can now oversee the whole job.

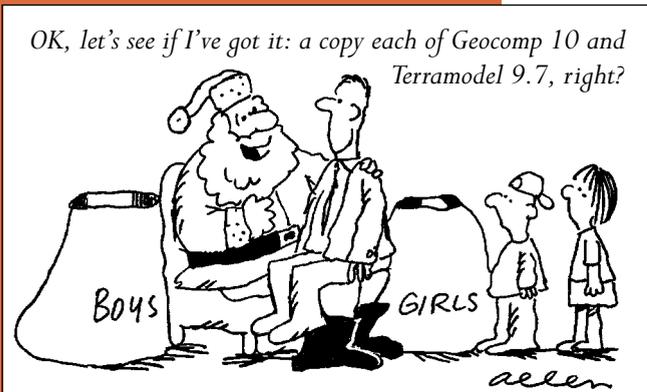
For more information, contact Geocomp Systems or Garry Essex at Ultimate Positioning (07) 3852 1245.

Terramodel has been involved in another first in Australia, this time as part of the new Trimble SiteVision package installed in northern New South Wales which brings GPS guidance of earthmoving machines into the bulldozer's cabin.

On building sites, this kind of system is relatively new, but essentially it adapts and extends the GPS positioning systems used in taxis to monitor their locations.

The SiteVision system has been applied commercially by South East Excavations to a housing construction site. Experienced Terramodel and Geocomp user Allan Archbold guided the installation of the system in his role as National Sales Manager of Ultimate Positioning in Brisbane.

The site spreads along three kilometres of beach front and requires much cutting and filling. The



## EXPERT ADVICE

### Sentinel Drivers

Terramodel and Geocomp, when running on Windows NT or 2000, require the Rainbow Technologies Sentinel System Driver. Check this if you have trouble with software finding

keys. In some cases, the drivers installed with Terramodel 9.6 work better than that installed with 9.7.

On Windows 95, 98 and ME, the driver is rarely required. If you have key problems, go to Control Panel / Add / Remove Programs and uninstall the Sentinel System Driver if it is listed.

### Printers

When looking to purchase a printer to work with Geocomp, check to see whether it is 'Optimised for Windows 95 or similar'. This usually means that it won't work with DOS applications such as Geocomp.

When printing, if you get a message advising you that there is a device conflict between Windows and Geocomp, this can generally be fixed by setting the printer driver to print directly to the printer.

### Duplicate Point Removal

If you have Geocomp 10, please download the update to SDS 170 Duplicate Point Removal from [www.geocomp.com.au/support/docs.html](http://www.geocomp.com.au/support/docs.html), if you don't have it already.



The Directors  
and Staff of  
Geocomp Systems  
wish all  
*Dimensions* readers  
and your families  
a festive and safe Christmas,  
and a prosperous New Year



# IN ACTION

## SURVEYORS, SYDNEY HARBOUR, OLYMPIC GAMES

Fencing off areas for public safety is a straightforward task on land, but on water it's not so simple.

John Ireland and his survey team at the New South Wales Waterways Authority tackled this job when SOCOG asked them to delineate areas in Sydney Harbour for the Olympic yachting events and closing ceremony fireworks.

Luckily, the team had been practising.

Exclusion zones were needed to keep pleasure craft and commercial craft from interfering with events and to prevent injury to onlookers during fireworks displays on the Harbour.

The largest exclusion zones were the competition courses: the swimming section of the triathlon, and all sailing courses for events on Sydney Harbour. Another zone was needed around the marina housing the competitors' yachts in Rushcutters Bay.

### Technology steps in

The size of these zones required laying about 300 marker buoys. To place one buoy on the Harbour less than 10 years ago, the team would set up theodolites on shore and triangulate the position—a very time-consuming process to undertake for 300 buoys.

Since 1995, the Authority has been using Geocomp Systems' GeoNav software to lay out exclusion zones for the start of the Sydney to Hobart Yacht Race and New Year's Eve and Australia Day celebrations, and for hydrographic surveys within the Harbour.

GeoNav is a real-time, high precision, high resolution hydrographic data acquisition, post processing and navigation system.

### Trial runs

Two World Championship sailing regattas held in Sydney Harbour in 1998 and 1999 gave the team the opportunity to trial their strategy for the Olympic Games.

SOCOG worked out the yacht courses and Waterways laid buoys to mark the spectator craft exclusion zones using GeoNav and GPS. In the week before the Olympic Games, crews in two boats equipped with laptops spent six hours a day over four days putting out the buoys.

The boats would carry 20–30 buoys at a time and laid them 75 metres apart to make a 'fenceline' delineating the exclusion zones. Only accredited boats were allowed within this area, and the fenceline was continuously patrolled and monitored to keep unauthorised boats out.

### Regulating shipping traffic

The Port of Sydney was closed while sailing events were under way. Passenger ferries had to stick to the fenceline and reduce speeds to avoid creating any boat wash.

At the end of each day's events, 60 buoys were taken out to open up 'gates' for ferries and allow ships to come in at night. The crews would finish picking up the gates after sunset, and be on the Harbour again early the next morning repositioning the buoys.

*Middle right: 'All kinds of boats patrolled the fenceline,' John explains. 'Water police, Waterways officers, Olympic volunteers—even volunteers from our office went out in small inflatable boats like these.'*

*Bottom left and bottom right: 'It was a fairly basic process,' says John. 'The surveyor running the software on a laptop would simply call 'Now!' and the crew would shove a buoy over the side.'*



**'Before the advent of hydrographic software, work at this scale was rarely done,' says John Ireland.**





# STAFF PROFILE



*Dimensions* talks to Barry Smith, Geocomp Systems Director and inventor of GeoNav software, about his attraction to the ocean and coastlines.

*Barry Smith with Lelystad in dry dock in Singapore*

**Q: What attracted you to surveying as a profession?**

**BS:** While at a surveying students' party at Melbourne University, I received an offer from the Head of the Surveying Department that I couldn't refuse: enter the second year of the Surveying course, complete the third and fourth years then work as a surveyor from the farm with a few days a week in the field. At that time I was having second thoughts about doing a further 8 years to complete my chosen 10-year course in neuro-psychology.

**Q: Why did you specialise in hydrographic work?**

**BS:** I suppose it was inevitable. I find experiencing the ocean and coastline to be very exciting. I was always interested in navigation: during university I worked on a cray fishing boat along the shipwreck coast near Port Campbell in western Victoria.

Along the base of the cliffs near Port Campbell, you can still find relics from wrecked ships. We found caves and forgotten, overgrown tunnels and stairways cut into the cliffs.

**We uncovered a steep, narrow stairway with many initials and dates carved into it—the most recent date was 1924.**

On graduating, I took a job as a hydrographic surveyor/programmer in Karratha, Western Australia. As well as excellent conditions, the job offered a free trip to Bali after every few months on site. As it turned out, I was transferred to the Gladstone Harbour

Deepening Project in Queensland and missed out on Bali.

**Q: It sounds dangerous.**

**BS:** It can be. A common and dangerous task is to transfer yourself and equipment from a large ship into a launch in rough seas by hanging over the side of the ship and clambering down rope ladders. Replacing the positioning equipment antenna will invariably require climbing to the top of the ship's mast amid the hot exhaust smoke while being rocked over about a 10-metre arc by the roll of the ship.

**Cyclones, snakes, and getting bogged miles from anywhere come to mind.**

Sometimes the local residents are the danger. Luckily I have only faced two handguns (Brazil and Indonesia) and one machine gun (Middle East).

Unexploded ammunition is relatively common in some parts of the world. At Thessaloniki in Greece, the harbour deepening project was very hazardous due to the many unexploded bombs, shells, grenades and even stone cannon balls left behind from the conflicts there.

**Q: So what's the attraction?**

**BS:** Well, within 4 years of graduating I had worked on projects in every Australian state as well as in Spain, New Zealand, The Netherlands, England, Greece, Denmark, Germany, Brazil, Singapore, Malaysia and Indonesia. Few jobs pay you to search for trig marks on tropical islands in Torres Strait, carry out beach-sand-level surveys among the bikinis at Surfers Paradise, or drop in for lunch at a local pub by helicopter.

## GEOCOMP SYSTEMS

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### Upgrade & Support Help Hotlines

For help with all queries about using our software.

We aim to respond to your call 95% of the time within 30 minutes, and 100% of the time within 2 hours.

Toll free: 1800 800 754 (in Australia)  
Email: [support@geocomp.com.au](mailto:support@geocomp.com.au)

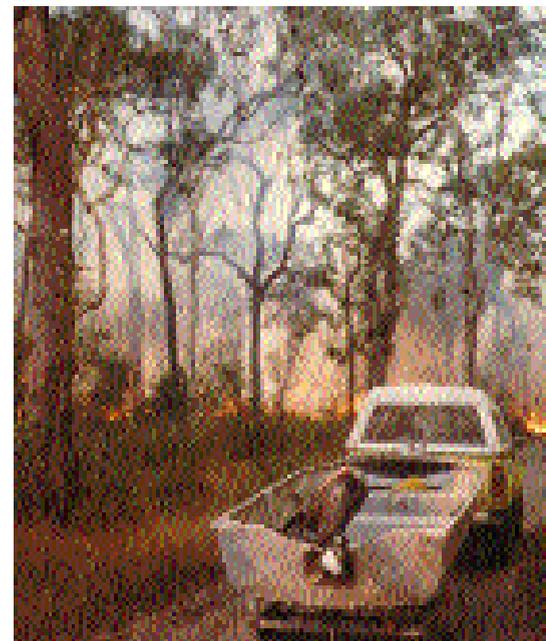
8.30 am-6 pm EST every working day

### Products

Geocomp Systems supports:

GeoCalc	GeoNav	Geocomp
Terramodel	Visualizer	
Trenchwork	Paydirt®	

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*Bushfire: occupational hazard.*

