



The Dirt Digger

Welcome...

To the last issue of Dirt Digger for 2000. This is our 13th issue, and no, we're not superstitious -- there's nothing unlucky about this issue. In fact, it's packed with exciting product developments which we hope will enhance your business.

2000 has been a very busy but fruitful year. Our hard work and development efforts have paid off and now we're ready to go to market with new products and tools to give us all a competitive edge through 2001.

In this issue you'll read about our major announcement: V5.0 of 4d Model is officially released this month and with the new features comes a new name -- 12d Model. This change reflects the expansion of the software and supports our growing overseas markets.

There are more details on the MIKE11 Interface Module which allows 4d and 12d Model to create a MIKE11 project from a ground surface module, and there's more on the 4d/12d Model HEC RAS interface which enables HEC RAS GIS files to be read into 4d/12d.

But wait, there's more -- we've introduced 4d Model Survey Lite, designed specifically for surveyors; contact us or your local distributor for details on the product and its new low cost.

Also, we've followed our sale to the US Army Corps of Civil Engineers with a sale to the Australian Army. See inside for the story of 4d joining the ranks of the Royal Australian Engineer Corps (RAE).

"And the winner is ..." read on to find out just who won our Distributor of the Year award.

Happy holidays to you and your family.

Dr Lee Gregory
Managing Director
lee@12d.com

Mr Alan Gray
Technical Director
alan@12d.com

4D Solutions Pty Ltd
ACN 056 019 713
Email: info@12d.com
PO Box 351, Narrabeen NSW 2101
Aust. Tel 02-9970 7117 Fax 02-9970 7118
Int'l. Tel 61 2-9970 7117 Fax 61 2-9970 7118
www.4d.com.au OR www.12d.com

Distributor of the Year

Ian Cameron of Technical Solutions, Queensland, is the 4D Solutions Distributor of the Year for 2000. Congratulations Ian on a job well done!

This award recognises annual sales results. Ian has not only excelled in his sales of 4d Model, now known as 12d Model, throughout the Queensland region but, just as importantly, has provided a high level of service to our Queensland customers.

A qualified civil engineer and registered surveyor, Ian's real-world experience has put him in good stead with 4D Solutions customers such as: Queensland Department of Main Roads; Brisbane City, Maroochy Shire and Gold Coast City Councils; Sinclair Knight Merz; Connell Wagner; and Cardno MBK.

Ian has been a 4D Solutions distributor for two and a half years, and was chuffed to have received the award. He credited his sales achievements and happy customer base to the proven strength of 4d Model and the regular updates to meet changing market needs. The pre- and post-sales technical support, the training and the marketing efforts of 4D Solutions had also all made a valuable contribution to his success, he said.

This is the second year the award has been presented. Last year's winner was Steve Crossley, SCS Software, Victoria.

Happy Holidays!

All of us at 4D wish you a safe and happy Christmas and we look forward to a continuing partnership with you in 2001. Thank you for your support throughout the year and best wishes for all success in the new year.

The 4D Solutions Sydney office will close on Wednesday, December 20 and re-open on Monday, January 8.



4d Model version 5.0 released under new name – 12d Model

The latest upgrade of 4d Model is turning heads as we demo it around town – not just because of the range of new features we have built into this leading Australian package but also because of the new name – 12d Model.

The name change has been driven by our growing presence in the international arena, especially in the UK and the United States. Owing to trademarking laws and the existence of another product called 4d in the UK and Asian markets, we had already re-named our software 12d in UK, USA and Europe.

With the release of the new version we wanted to maintain international consistency and recognition of the name, thus 12d has become the universal branding of our software. The company remains as 4D Solutions Pty Ltd.

The new name also recognises the breadth of the capabilities built into the software!

Enhancements to 12d Model V5.0

The 12d Model Survey module has been dramatically enhanced with a new Graphical Field File Editor, field templates for quick road pickup, pipe and attribute data capture and display, continual upgrading of the integration with various field data recorders, AMG<->MGA, Zone to Zone and traverse adjustment.

For civil engineering applications, civil designers will discover new features to streamline their job. These include: the use of raster (orthophoto) images, dynamic zoom and pan, true-type fonts, new text options, flip triangles, colouring by depth and height ranges between surfaces, volumes by height ranges, DWG I/O and online help. The upgrade also provides comprehensive support for drainage packages such as PC Drain, Drains, RAT2000, RAT HGL, and ILSAX. Support for HEC RAS, MIKE 11, XPSWMM and UNET is also incorporated.

We have already conducted a series of seminars in Perth, Sydney and Brisbane to demonstrate these upgrades incorporated within the new Version 5.0 of 12d Model and the consensus has been that 12d Model truly does mean "working smarter, designing faster."

Farewell to AMG and ISG

Just a reminder that Australia has adopted a new geocentric model of the earth and as a consequence, the longitude and latitude of every point will now change. During 2001, AMG will be phased out and replaced by MGA, based on the new lat-long.

A new module for converting between AMG and MGA will be available in 12d Model V5.0.

HEC RAS models faster

The 4d and 12d Model HEC RAS interface is now able to read HEC RAS GIS format files - good news for clients who have an existing HEC RAS project with 3D data as they can now read the cross sections directly into 12d Model.

The interface substantially reduces HEC RAS modelling time by creating a HEC RAS project 'ready to run'. Up to five million surface data points can be modelled! Only three lines in plan are required to define the HEC RAS project geometry. One string identifies the river centre line and the other two mark the left and right banks. The interface prompts for discharge, Manning's n, cross section length and spacing.

Automatically generated cross sections are created perpendicular to the channel centre line. However, these sections may be customised by changing the length or location, or by adding points to create bent cross sections.

A levee tolerance can be set to automatically identify levee points. A levee point is inserted if the ground surface drops more than the specified tolerance as one progresses away from the channel centre line.

The interface has a filter function with a user-specified bandwidth to eliminate unnecessary data points from the cross sections.

Water level results are imported into 12d Model and a water surface created; flood limits are determined at and between the cross sections. This surface can have contours drawn on it and cross sections/long sections can be obtained anywhere along the water surface.

Significant features can be highlighted using colour.

Interface features:

- Natural and engineered waterways
- Obstructions and buildings included
- Cross section filter can automatically remove unnecessary data points
- Automatically locate levee points
- Straight line and bent cross sections
- Flood limits shown in plan/section or perspective views
- Plan drawings coloured by depth
- Automated engineering type drawings for river profiles and cross sections
- 'Walk down' the river with 3D perspective views
- Create a 3D AVI movie of the project showing flood limits.

A solution for Army surveyors

Last Dirt Digger we announced the sale of 4d Model, now known as 12d Model, to the US Army Corps of Civil Engineers. Now we have joined the ranks of the Australian Army's Royal Australian Engineer Corps (RAE).

The RAE needed to implement a common software solution incorporating the full range of engineering applications for its survey-trained soldiers. RAE selected 12d to provide the means by which all Australian Army horizontal construction tasks will be designed in the future.

The RAE has a number of units capable of horizontal construction tasks in which the specialist soldiers assist in the design and layout. RAE trains its soldiers to perform these tasks in a war-like environment but also undertakes peacetime construction jobs such as support to the Defence Co-operation Program (DCP) and ATSIC (Aboriginal and Torres Strait Islander Commission) Army Community Assistance Project (AACAP). RAE surveyors are therefore employed in many outback areas of Australia and throughout the Pacific.

RAE units use both PC deskstations and notebooks to plan and execute construction tasks. The Army's need to deploy rapidly, and operate in remote areas, demands stable computer platforms that have the ruggedness to withstand harsh climates but incorporate the functionality of the latest engineering applications.

Management of engineering design with RAE had not previously included a common software solution and this resulted in the inconsistency of different units using a variety of applications.

Major Brian Sloan, Senior Instructor of Geomatics at the Combat Arms Training Centre - Moorebank, said this inconsistency led to a high training bill and hindered the development and maintenance of procedures. "The real risk," he said, "was degradation in the quality assurance the Army strives to provide for all engineering works. We needed a single common application."

Major Sloan explained that as well as the full range of engineering applications, the software solution also had to incorporate the following characteristics: the interface must be intuitive - this inferred a Windows environment; the data model must be responsive to the rapid growth in information technology; and the technical support had to be reliable, timely and affordable.

He commented that 12d Model has a very capable and extensible set of applications.

"With a stable software package, the updates and maintenance should be easily achieved," he said and noted that "12d's speed, even on the most modest of processors, is remarkable. The triangulation algorithms are very efficient and the resulting minimal time complexity makes it very competitive compared with other applications."

Major Sloan said the ease with which first-time users pick up the application is fundamental to the Army's training system. "Army surveyors must have an intimate knowledge of a number of GIS (geographic information systems), Remote Sensing and surveying applications. The easier the GUI (graphical user interface), the less the technician has to re-learn," he explained.

Commenting on the support received from 4D Solutions, Major Sloan said "I believe a good technical partnership between 4D Solutions and RAE is growing. Regular newsletters, the sharing of technical advice and a high level of contact between 4D programmers and Army surveyors has helped to build the feeling that the Army has made a good choice," he said.

"Being an Australian company, 4D Solutions is able to be very responsive to our soldiers' technical queries. The benefits of the easy-to-use interface will reduce training time and the ability to re-use previous tasks will shorten design times."

Displaying flood levels

MIKE11, developed by the Danish Hydraulic Institute (DHI), is a package for the simulation of surface run-off, flow, water quality and sediment transport in channels, rivers and flood plains. We are now up and running with the marketing of our MIKE11 Interface Module announced in the last Dirt Digger. This module allows 4d and 12d Model to create a MIKE11 project from a ground surface module.

Whereas users previously had to spend days entering ground surface data into MIKE11, it is now possible to begin with the survey data, quickly create the MIKE11 project, and finish with a 3D perspective view of the channel with maximum flood inundation limits inside 4d/12d Model.

The water surface created in 4d Model from the MIKE11 water levels is a powerful tool to display flood limits. For example, it allows the viewer to "walk down" or "fly over" the flood plain to inspect the water levels throughout the project giving an instantly visible interpretation of the status of the water levels.

The 4d Model presentation capabilities include a number of enhanced viewing features.

Aussie, Aussie, Aussie

They were "the best Games ever" and it is fitting that Australian-developed software played a key role in the construction of many of the venues and infrastructure which contributed to the success of the much-lauded Sydney 2000 Olympics.

4d Model, now known as 12d Model, was used by principal consultants and contractors such as Abigroup, Connell Wagner, Walter Construction Group, Sinclair Knight Merz, SMEC (Snowy Mountains Engineering Corporation) and Daracon Engineering for the construction of the Athletics Centre, Hockey Centre, Newington Olympic Village, the Regatta Centre – Penrith, Stadium Australia, the SuperDome, the Tennis Centre, the Sydney Showground and the Velodrome – Bankstown.

The software also was used for:

- the Homebush Bay Infrastructure which included the main boulevard and major roads;
- all of the inground services – water, power, communications, gas – associated with putting that infrastructure into place;
- the northern water feature, Fig Grove;
- the central water feature, Homebush Bay;
- the Archery Marker and Bennelong Road intersection;
- pedestrian bridges, paved areas and light towers.

For one of the major facilities, the fully covered Sydney SuperDome built by civil construction giant, Abigroup Contractors, 12d Model ensured on-site quality assurance checking of all steps in the construction of Australia's largest indoor sports and entertainment centre. Architectural and engineering service models were fed on-site into a 12d Model to ensure construction of the arena went according to plan.

"12d Model has proved to be an excellent tool for handling extremely large project models," said a spokesperson for Abigroup.

IntelliCAD Update

Thanks for all the responses to our request for information on Intellicad, the AutoCAD compatible software.

Users are happy with IntelliCAD especially the fact that it can read many DXF and DWG files that AutoCAD has trouble with. That alone made it worth paying \$US 99.

IntelliCAD without rendering and rasters can be downloaded for free from www.cadopia.com, or for \$US 99 with rendering and rasters.

Welcome Aboard

Sorry but due to lack of space, some of our new licenses/additions must be left until the next Dirt Digger

Abigroup – Qld, Vic
 Baulderstone Hornibrook – NSW
 Baseline Consulting– Qld
 Baulderstone Hornibrook - NSW
 Bill Guy – ACT
 Birt and Associates - Qld
 Bornhorst & Ward – Qld
 Bycad - Qld
 Cardno MBK – Brisbane, Townsville - Qld
 City of Denver – USA
 Clough Engineering - WA
 Connell Wagner - Qld
 Coomes – Vic
 Curtins Consulting Engineers – UK
 Engineering Setout – NSW
 Halls Fripp Surveying - Qld
 Hyder – Vic
 JA Liddle - Qld
 Jeff Brown Surveys – NSW
 John Moylan and Associates – Ireland
 KGS Group – Canada
 Lawson and Treloar - NSW
 Maroochy Shire Council - Qld
 McConnell Dowell - WA
 OTAK Inc – USA
 Ove Arup – NSW, Vic
 Pike Mirils McKnoulty - Qld
 Queensland Main Roads – Cairns, Cloncurry, Rockhampton, Roma, Townsville, Warwick
 Queensland Rail
 Redlands Shire Council - Qld
 RTA – Grafton, Wagga Wagga
 Sinclair Knight Merz – NSW, WA, Tas, Qld
 Stanley and Partners – Qld
 Toowoomba City Council - Qld
 US Army – USA
 Worley Fraser - WA
 WBCM – Vic
 WBM - Qld
 WP Brown – ACT, Qld
 Xeros Pertile - NSW

Top sales & support

4 D Solutions is committed to providing not only the best civil engineering software on the market, but also the best service and support.

Expert sales support is available from:

Tony Ingold, B. E. (Civil), at 4D Solutions in NSW, Tel (02) 9970 7117, Fax (02) 9970 7118;

Maria Bernhagen at Critical Image in WA, Tel 0411 601 066, Fax (08) 9314-3241;

Steve Crossley, B.Eng. (Civil), MIE Aust., at SCS Software in Vic, Tel (03) 9802 8849, Fax (03) 9803 1057;

Ian Cameron, B. Sc Ph.Eng.(I.T.C.), Registered Surveyor, at Technical Solutions in Qld, Tel/Fax (07) 3378 8702;

Gary Page at Salesoft CAD Solutions in NZ, Tel (+64 9) 373 2989, Fax (+64 9) 373 2990;

Desmond Siau, B.E. Hons (Civil), M. Eng., at Sunsoft AEC in Malaysia, Tel (+60 3) 783 7707, Fax (+60 3) 780 2262.

Richard Worrow, BSc CEng, at Waterman IT in London, England, Tel (+44 20) 7928 0603, Fax (+44 20) 7261 0972